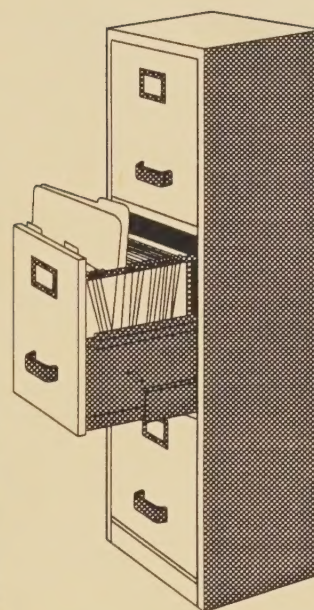
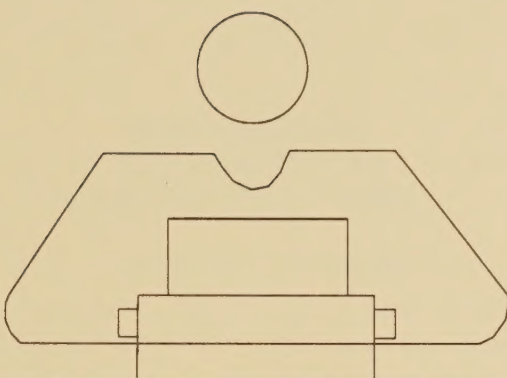
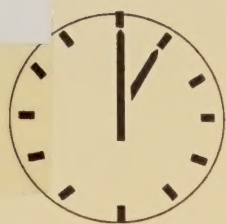


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SHORT SUBJECTS AND TIMELY TIPS FOR PESTICIDE USERS

1989

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SHORT SUBJECTS
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ANNOTATED BIBLIOGRAPHY - AERIAL APPLICATION OF
INSECTICIDES FOR SUPPRESSION OF WESTERN DEFOLIATORS

As a result of a recommendation by the National Steering Committee for Aerial Application of Pesticides--Western Defoliators, information is currently being gathered for the publication of an annotated bibliography that will summarize administrative, physical, and biological aspects of past field and pilot tests, and demonstration and operational projects involving pesticides to suppress western defoliators. The bibliography will consolidate information from industry, research, and various others. It will be used to share information among user groups. The information will be entered into an updatable, computerized database. A "hard copy" publication will be generated when all of the information has been received and processed. If you have data to submit or wish additional information

CONTACT: PAT SKYLER (CA) (916) 758-4600

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090-6090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

U.S.-USSR AGREE ON AGRICULTURAL TEAM EXCHANGES

Dateline MOSCOW. December 8--The U.S. and USSR Joint Committee on Cooperation in Agriculture (JCCA) signed a protocol today after two days of talks to carry out exchanges of teams on agricultural economics, agricultural science, forestry, and food processing in 1990-91.

The exchanges allow research and technical experts from both countries to share agricultural information, and to establish and strengthen working relationships with scientific counterparts.

The protocol was signed by Richard T. Crowder, Under-Secretary of Agriculture for International Affairs and Commodity programs, U.S. Department of Agriculture, and Y.A. Borisov, Deputy Chairman, State Commission on Food and Purchases.

"This ninth meeting of the JCCA provides both sides with a challenge to build on past institutional linkages and establish new ones," said Crowder. "It also provides an equally important opportunity for increased mutual understanding through people-to-people contacts."

The JCCA agreed to establish a new Forestry Working Group, and delegates from USDA's Forest Service met with counterparts from the Soviet State Forestry Committee to expand collaborative efforts on environmental issues and forestry management systems. The Food Processing Working Group met for the first time. Department of Commerce representatives and their Soviet counterparts at the State Commission on Food and Purchases planned activities to promote U.S.-USSR joint ventures and private sector relations in food processing.

Under the protocol, exchanges focusing on trade will include studies of: the evolving Soviet comparative advantage in agricultural trade of some commodities; new commercial entities of the trade system which are under development; the market potential for processed packaged foods and other high value products through direct contact with representatives of USSR trade agencies and firms; and the economic aspects of cotton, fur, poultry, and vegetable-oil industries.

It is planned that U.S. scientific teams will visit the Soviet Union to study: Soviet technology in animal husbandry practices and to determine the prospects for supplying beef and dairy cattle semen and embryos; weather and climate applications for agriculture; preserving reindeer ecological systems; enhancing and protecting water quality; germ plasm exchanges for fruit and nut trees; and development of a joint plant genetics resource base. A joint publication on soil and water conservation will also be produced.

For additional information contact the USDA/Office of International Cooperation and Development, Scientific and Technical Cooperative Division, 302 McGregor Bldg., Washington, D.C. 20250-4300.

CONTACT: RICHARD RORTVEDT (DC)

(202) 653-7857

CORRECTION

The telephone number given for Thomson Publications in SSTT Issue No. 89-19 was incorrect. It was a telefax number. The correct number is (209) 435-2163.

GUIDELINES DRAFTED FOR
AERIAL CONTROL OF DESERT LOCUST

Scientists representing the USDA Forest Service, the Animal and Plant Health Inspection Service (APHIS), the New Mexico State Department of Agriculture, the New Mexico State University, Cranfield Institute of Technology, and the University of California met at Las Cruces, NM recently met with Walter Knausenberger, U.S. Agency for International Development (AID) and Philip Symmons, United Nations Food and Agricultural Organization (FAO) to develop guidelines for control of desert locust (*Schistocerca gregaria*) in Africa. This major economic pest of Africa, unchecked, can devastate vast areas of crop and forage lands. The group debated two approaches commonly used in aerial spraying--ultra low volume (ULV) spraying with wide swath width calibrations and spraying with a crosswind; and low volume (LV) spraying with a narrow swath calibration and spraying with or without assistance of wind. ULV spraying usually requires VMD's less than 125 micrometers while LV spraying usually requires VMD's greater than 125 micrometers. The group discussed these two approaches in the context of maximum swath spraying and minimum swath spraying respectively; and drafted operational guidelines to be used for AID/FAO supported aerial application projects in Africa. The group's recommendations are as follows:

1. ULV pesticides are recommended for aerial desert locust control. They should be in effectively non-volatile formulations, which for logistic reasons, should achieve satisfactory control at area dosages in the neighborhood of 0.5 to 1.0 liters per hectare.
2. For air-to-air spraying of locusts in flight, small droplets are desirable. The spray system should be such as to produce as much as possible of the emitted pesticide in droplets smaller than 100 micrometers.
3. For settled targets substantial swath widths can be achieved in an acceptable steady crosswind above 2 meters per second measured at 2 meters - maximum swath spraying; a 10-meter flying height with a 150 meter track spacing is a typical combination with an appropriate aircraft. Targets can be treated in relatively still air with an appropriate track spacing - minimum swath spraying. For both methods accurate track spacing is important; and 3/4 of the emitted pesticide volume should be within the range of 80 to 125 micrometers. Under marginal weather conditions, larger sized droplets may be needed. Spraying should not be conducted during strong convection; or under stable and/or inversion conditions when the air is very still.
4. It is highly desirable to monitor environmental conditions and treatment effectiveness within operational treatment blocks.

Adoption of these guidelines should lead to more effective and environmentally safe treatments of desert locust in Africa.

For more information,

CONTACT: JACK BARRY (CA.)

(916) 758-4600

FOREST SERVICE COOPERATES IN THE CONDUCT OF PESTICIDE SPRAY TRIALS

The Pacific Northwest Region (R-6), Forest Pest Management and Abbott Laboratories, with assistance from R-4 and the Washington Office (FPM), conducted spray trials with Dipel 6AF at the Yuba County airport in Marysville, CA., November 30 and December 1. The objective of the trials was to determine if the new formulation of Dipel 6AF could be sprayed through application systems typical of those used on operational western spruce budworm suppression projects in the Pacific Northwest. The insecticide was applied over cardlines by a Turbo Thrush equipped with 6 Miconair AU 5000 rotary atomizers flying at 140-150 MPH, a Turbo Thrush equipped with 8 Beecomist 360A rotary atomizers flying at 140-150 MPH, and a Bell 47G-3B equipped with 6 Beecomist 360A rotary atomizers flying at 55-60 MPH. All applications were made at a rate equivalent to 1/3 gallon of undiluted product per acre. Dipel 6AF handled well in these trials. It was atomized over a VMD range of 88 to 170 microns. None of the components of the spraying systems showed any evidence of clogging. There was no indication of solids settling out after the product had set for several days. The pumps on both aircraft were able to pump the product and maintain a constant pressure. The Swathkit (see SSTT Issue No. 89-7) was used to assess spray deposit on cards. As a result of the spray trials R-6 will qualify Dipel 6AF for potential use on the 1990 western spruce budworm project on the Yakima Indian Reservation (See item p. 5, this issue).

For followup on these spray trials

CONTACT: JACK BARRY (CA.)

(916) 758-4600

FSCBG II WORKSHOP COMPLETED AT OREGON STATE UNIVERSITY

The second FSCBG aerial spray model workshop was held at Corvallis, OR, December 4-8, 1989. Oregon State University, Continuum Dynamics, Inc., and WO/FPM cooperated in presenting the workshop to 13 students from States, Universities, and the Forest Service. The workshop focused on using the model and selecting inputs to solve a vegetation management problem, and on understanding model predictions. Student comments were highly supportive of the model and quality of instruction. After the students presented their own problem solution, a critique was held that provided helpful inputs for conduct of the next workshop. The following students participated:

Bill Antrobus	- Forest Service, TCFPM, Missoula, Mt.	Entomologist
Clint Bowman	- State of Washington, Dept of Ecology	Ecologist
David Grimbale	- Forest Service, PNW, Corvallis, Or.	Entomologist
Don Lassila	- Forest Service, MTDC, Missoula, Mt.	Engr. Technician
Steve Munson	- Forest Service, FPM, Ogden, Ut.	Entomologist
Jim Simonson	- Forest Service, Willamette NF, Or.	Silviculturist
Lynn Webb	- Forest Service, Stanislaus NF, Ca.	Silviculturist
Ken Bentson	- Forest Service, PNW, Corvallis, Or.	Chemist
Robert Denning	- University of California, Davis, Ca.	Engineer
Mahmoud Harb	- United Nations-FAO, Desert Locust Control Station, Cairo, Egypt	Agricultural Engineer
John McCullough	- Forest Service, Siskiyou NF, Or.	Silviculturist
Bill Settle	- University of Washington, Seattle, Wa.	Zoologist
Bob Tisdale	- Idaho Department of Lands, Id.	Entomologist

The next FSCBG workshops will be held at Clemson University January 8-12, 1990 and February 5-9, 1990. For additional information,

CONTACT: JACK BARRY (CA.)

(916) 758-4600

YAKIMA INDIAN RESERVATION PLANS SPRUCE WESTERN BUDWORM SUPPRESSION PROJECT

A Western Spruce Budworm suppression project is being planned for 1990 for the Yakima Indian Reservation and intermingled State and private lands in the State of Washington. The outbreak has been causing defoliation for 3 to 4 years in the affected stands. Some topkill is starting to occur in the most severely defoliated stands.

The Yakima tribal council and the Yakima Agency, Bureau of Indian Affairs (BIA) have asked the USDA-Forest Service to conduct a suppression project to prevent further damage to the resources at risk. The Forest Service, working closely with the BIA and the Yakima tribe, is taking the lead in planning the project. The BIA has prepared an Environmental Assessment tiered to the R-6 Western Spruce Budworm Management EIS. The EA will be co-signed by the Yakima BIA Superintendent and the R-6 Regional Forester.

The following facts describe the current plans for the scope of the proposed project (these are subject to change as conditions warrant):

Total acreage in the analysis units	74,327
Total acreage to be sprayed	70,944
Tribal acreage to be sprayed	65,583
Champion International acreage	3,603
Other fee acreage	1,758
Acreage restricted to helicopter	19,000
Fixed-wing and/or helicopter acreage	51,944
Estimated timber volume (MBF) at risk	18,981
Project planning cost estimate	\$1,525,000

Insecticides containing the bacterium Bacillus thuringiensis (Bt) will be applied to suppress this pest population. The Forest Service will require the aerial application contractor to supply one of four Bt formulations that FPM has qualified for use on the project. The Yakima tribal council has stipulated that oil formulations of Bt will not be used on the reservation.

Contract award is planned for mid-March. The project will move on-site the last week in April to begin population sampling and spray block layout. Approximately 40 people, including Yakima tribal members, BIA, and Forest Service employees will be needed. ApplicationS could begin as early as the first week in June if budworm populations are found to meet treatment thresholds. Spraying is expected to take place over a two-week period.

For further information,

CONTACT JIM HADFIELD (OR.)

(503) 326-2727

CHANGES IN THE RANKS

Several Pesticide-Use Management and Coordination (PUM&C) personnel changes have recently taken place in Regions 2, 3, 5, 8, and in the Washington Office:

Region 2. Dave Johnson, Pathology Group Leader for Timber, Forest Pest, and Cooperative Forestry Management in Region 2 (Denver, CO) has been coordinating pesticide use there for some time. Now, however, Curtis O'Neil, entomologist, will have these responsibilities.

Region 3. Pending the departure of Jesus Cota from Region 3 (see below), Doug Parker will temporarily handle the pesticide-use management and coordination responsibilities in the Southwestern Region (R-3).

Region 5. John Borrecco, formerly the Program Budget, Animal Damage, and Timber Coordinator in the Pacific Southwest Region (R-5), has accepted the position of pesticide coordinator for R-5.

Region 8. Max Williamson, herbicide specialist for the Southern Region (R-8), announced his retirement December 29. Max, in his tenure as Regional herbicide specialist has done an outstanding job of developing application techniques and tools, and determining how, when, and where to use appropriate herbicides, in forestry in the South. Besides determining how to use the herbicides, he has developed an intensive technology transfer program where he has provided training in the effective use of herbicides to all user groups in the South including contractors, State and local groups, private companies and universities. As time permitted, Max also provided technical assistance to other FS staffs nationwide.

Washington Office. Jesus A. Cota, Pesticide Coordinator for the Southwestern Region (R-3), recently accepted the position of Pesticide Specialist, Washington Office, Forest Pest Management. He will report on February 25, 1990.

In his new position, Jesus will be the appeals coordinator for FPM and have lead responsibility for appeals that pertain to the proposed use of pesticides by the Forest Service. In coordinating the appeals process, he will coordinate personnel and resources to respond to the appeals, meet deadlines concerning responses, and keep appropriate contacts updated.

Although Jesus is a native of the Southwest, he is not a stranger to the East having worked five years ago with the Northeastern Area State & Private Forestry as the IPM Specialist in Morgantown, West Virginia. Jesus, has a B.S. in Entomology from the University of Arizona and a Ph.D. in Entomology from the University of California, Davis. Jesus will report to the Washington Office February 25. His wife Sylvia and their three children will make the trip in June following completion of the school year.

For additional information on any of these personnel changes,

CONTACT: MAX OLLIEU (VA.) (703) 235-1560

An up-to-date list of all Forest Service pesticide coordination personnel is appended to this issue.

Any changes in this list should be reported to the Washington Office

CONTACT: DENNIS HAMEL (VA.) (703) 235-8209

WORLD CONFERENCE ON PESTICIDES

Dennis R. Hamel, Forest Pest Management pesticide specialist, and editor of "Short Subjects and Timely Tips for Pesticide Users," recently attended the First Third-World Conference on Environmental and Health Hazards of Pesticides in Cairo, Egypt. The purpose of the conference was to evaluate and discuss pesticides, the environment, and human health. Approximately 400 participants from 37 nations attended the opening ceremony hosted by Egyptian President Mohamed Hosny Mubarek, in absentia. The opening session was chaired by Professor Khairy A. Samra, Dean, Kasr El Aini Faculty of Medicine, Cairo University.

On days subsequent to the opening session there were concurrent workshops, poster paper sessions, and open discussions. Topics ran the gamut from Toxicology and Toxicokinetics of Pesticides to Environmental and Health Education, Safety Assessment and Management of Pesticides, to Natural Products.

Mr. Hamel had been asked to present a poster paper but had not received confirmation on arrival. It was only on the second day of the conference that he was advised that his poster paper had been elevated to an oral presentation. Then, upon arrival at the session he was informed that Co-Chairs G. Idnis (Sudan) and Fengsheng He (China) were absent and could he chair the session. Mr. Hamel reports it was a great experience overseeing oral presentations by Dr. Van Assche (Belgium), M. Taker (United Nations, FAO), M. El-Okda (Egypt), and H. Kaacr (Yemen) and presenting his own paper on "Controlling Pests in Forestry in the United States."

One afternoon, when papers of less interest to Mr. Hamel were being presented, he attempted to visit the Entomological Society of Egypt Headquarters. Unbeknownst to him, they are off Tuesdays, Thursdays, and Sundays. He had made the mistake of heading through horrific traffic on Thursday!

The 2nd Third-World Conference on Pesticides is scheduled for 1992. It is recommended that the USDA Forest Service plan to participate.

CONTACT: DENNIS R. HAMEL (VA.) (703) 235-8209

VISIT TO CANADA'S FOREST PEST MANAGEMENT INSTITUTE

A USDA Forest Service team from Forest Pest Management (FPM) lead by Jim Space, Director, FPM/WO, Max Ollieu, Assistant Director (Pesticides), FPM/WO, and Allan Bullard, AIPM Program Manager, Morgantown, WV visited Forestry Canada's Forest Pest Management Institute at Sault Ste. Marie, Ontario, December 20-21. Dr. George Green, Director General at FPMI and Errol Caldwell, Director, Pest Management Applications & Environmental Research hosted the Americans. The agenda for the session included overviews about FPMI and FPM organizations, regulatory updates pertaining to pesticides, NAPIAP and other cooperative opportunities, joint working groups and workshops, memoranda of understanding and FPMI research in progress. The visit closed out with a tour of FPMI.

The American team was very impressed with the quality of the staff, work underway, and facilities at FPMI. Numerous opportunities were identified for cooperative efforts between FPM and FPMI. A draft (MOU) that covers the various areas of possible cooperative efforts in pesticides and pest control technology will be developed between the USDA Forest Service and Forestry Canada. A second visit to review the action underway or planned will be made in June, 1990. For additional information

CONTACT: MAX OLLIEU (VA.) (703) 235-1560

ANOTHER NURSERY MANAGEMENT EIS PLANNED

As noted in the Wednesday, December 6, 1989 Federal Register (Vol. 54, No. 233, p. 50421), the Forest Service will prepare an environmental impact statement (EIS) for Nursery Pest Management Activities at the J.W. Toumey Nursery, Watersmeet, Michigan. The proposed action is to control unwanted vegetation, disease, insects and animals in the J.W. Toumey Nursery. The nursery management activities that require controls include cover crop management, seed pre-treatment, nursery seedbed preparation, sowing, seedling growth from germination to lifting, and seed storage. The control methods under consideration include biological, chemical, manual, and mechanical techniques. Combinations of these techniques, in an integrated pest management strategy, will also be considered. The EIS follows the format established in other forest nursery EISs, e.g., R-1 (Idaho), R-2 (Nebraska), R-4 (Idaho), R-5 (California), and R-8 (Mississippi). The agency invites written comments and suggestions on the scope of the analysis. The agency also gives notice of the full environmental analysis and decisionmaking process that will occur on the proposal so that interested and affected people are aware of how they may participate and contribute to the final decision.

Comments concerning the scope of the analysis must be received by December 29, 1989 and submitted to David H. Morton, USDA Forest Service, Ottawa National Forest, East U.S. 2, Ironwood, Michigan 49938. Questions about the proposed action and EIS should be directed to Nursery Manager, J.W. Toumey Nursery, USDA Forest Service, Ottawa National Forest, P.O. Box 445, Watersmeet, Michigan 49969.

CONTACT: TOUMEY NURSERY MG..(MI) (906) 358-4523.

NURSERY WORKER EXPOSURE STUDY

A study funded by the National Agricultural Pesticide Impact Assessment Program (NAPIAP) on Nursery Worker Exposure was completed recently. Dr. Terry Lavy, University of Arkansas, submitted his draft final report for review. In this study Dr. Lavy monitored dislodgeable residues on conifer seedlings for 17 pesticides in 5 nurseries and deposits on patches worn by workers in 3 nurseries. In addition, 7 of the pesticides were studied in more detail in 3 nurseries (i.e., the absorbed dose entering the body of the worker was estimated by analyzing urine of exposed workers). The nurseries involved were: (1) Dislodgeable residues: Toumey Nursery, Michigan; Coeur-d-Alene nursery, Idaho; Ashe Nursery, Mississippi; Stone Nursery, Oregon; and Phipps State Nursery, Oregon; and (2) patches plus urine: Ashe, Stone and Phipps Nurseries.

Preliminary results of the study show that 12 of the 74 nursery workers (weeders, scouts, applicators, and lifter-packers) in the study received some exposure to pesticides. Three pesticides showed up in the urine of some of the workers: benomyl, bifenoxy, and carbaryl. However, they were at levels of little concern. For example, margins of safety calculations for the most highly exposed workers in the study are: benomyl, 1736; bifenoxy, 2083; and carbaryl, 1087. The pesticides which did not show up with absorbed doses in the urine were captan, chlorpyrifos, fenvalerate, and glyphosate. For additional information on this study.

CONTACT: LARRY GROSS (VA) (703) 235-8209

NEW ADVISORY MEMORANDUM ISSUED

Advisory Memorandum No. 447 was recently issued by the Washington Office. The memo encloses an article entitled, "Treated Wood Products, Their Effect on the Environment," by D.A. Webb and L.R. Gjovik. The information in the article should be shared with all persons involved with pesticide-treated wood.

Briefly summarizing, the article makes the following points:

1. Although creosote, pentachlorophenol, and waterborne arsenicals are pesticides, EPA's pesticide regulations do not consider wood treated with these materials to be pesticides.
2. Wood that has been treated with the above chemicals does not present an unreasonable health risk to humans, animals, or the environment.
3. EPA has concluded that the benefits of treated wood, and the preservatives that are used to treat wood, outweigh any potential risks that may occur.
4. Preservative chemicals do not move and migrate from treated wood and cause significant environmental hazards, nor do the chemicals bio-accumulate to be of potential risk.
5. There is no cause for concern of the general public when exposed to properly-treated wood products when they are used as recommended.

Appended to the article are Consumer Information Sheets for each group of wood preservatives. It is recommended that these be filed with and distributed much like Material Safety Data Sheets. For additional information

CONTACT: BILL PENOYAR (VA.)

(703) 235-1524

PATH OF LEAST RESISTANCE

More than 500 species of insects worldwide have become resistant to one or more pesticides, resulting in a pest management problem that affects not only crop production but also human and animal health. Transgenic plants, too, are just as likely to feel the impact of pest resistance. To overcome this growing problem, the Pesticide Research Center at Michigan State University has developed an interdisciplinary research, training, and education program.

About 25 faculty, research associates, and other staff are working to develop resistance management strategies that are profitable and environmentally safe. One program focuses on ways of extending the useful life of desirable pesticides. Other current research projects include resistance to Bacillus thuringiensis endotoxin and transgenic plants that contain insect resistance factors. In cooperation with the "Western Regional Coordinating Committee--60" Pesticide Resistance Project, the Center publishes a free biannual newsletter that reviews current activities, news, and publications in resistance management both nationally and worldwide. To be placed on the mailing list for "Pesticide Resistance Management,"

CONTACT: PESTICIDE RESEARCH CENTER (MI.)

(517) 353-9425

UPCOMING EVENTS

January 29, 1989-February 2, 1990. Biennial, National Pesticide-Use Management and Coordination Workshop, San Antonio, Texas. Purpose: Update personnel on topics such as pheromone registrations, endangered species protection, aerial application steering committees, risk assessments, NAPIAP, and pesticide-use reporting. Also to be discussed are new policies and procedures, e.g., FSH 2109.11.

CONTACT: MAX OLLIEU (VA.) (703) 235-1560

July 29-August 1, 1990. Society of American Foresters National Convention, Washington, D.C. Theme: Are Forests the Answer? Forests are being proposed as the solution to an increasing number of environmental problems, ranging from rising levels of carbon dioxide worldwide, to soil conservation, to deforestation. Heads of national and international governments and organizations, as well as technical experts and leaders in the environmental movement, will investigate and debate whether forests are indeed the solution to a sustainable society that is dependent on managed forests.

CONTACT: CHARLES HARDEN (MD.) (301) 897-8720

July 29-August 1, 1990. SAF Forest Pest Management Working Group (B-2) technical session at the National SAF Convention, Washington, D.C. (see above). The program co-chairs are John Witter and Mary Ellen Dix. Barbara Weber, B-2 Chairman, will coordinate a field tour. The Working Group is also exploring the possibility of two other activities at the convention. The first is a pre-convention workshop on media relations, which would be aimed at anyone who deals with the media, not just forest pest managers. The other activity is a poster session exclusively for papers dealing with forest pest management. This is aimed particularly at students who often find little other opportunity to participate in an SAF convention.

CONTACT: BARBARA WEBER (DC) (202) 447-7075

July 30-August 2, 1990. Thirty-fifth Annual Southern Forest Insect Work Conference, Fayetteville, Arkansas.

CONTACT: LYNNE THOMPSON (AR.) (501) 460-1052

August 5-9, 1990. American Phytopathological Society joint meeting with the Canadian Phytopathological Society, Grand Rapids, Michigan.

CONTACT: APS, 3340 PILOT KNOB RD., ST. PAUL, MN., 55121

August 5-11, 1990. IUFRO XIX World Congress. Theme: Science in Forestry: IUFRO's Second Century.

CONTACT: D.K. LEMKAY (SEC), IUFRO 1990
BOX 1990, PLACE D' ARMES
MONTREAL, QUEBEC H2Y 3L9

UPCOMING EVENTS (CONT.)

November 28-30, 1990. First International Conference on Wood Protection with Diffusible Preservatives, Nashville, Tennessee. A joint session sponsored by the USDA Forest Service and the Forest Products Research Society (FPRS)

CONTACT: DR. T.C. AMBURGERY (MS.) (601) 325-3057

February 19-22, 1990. Seventh Annual NPIRS Users Conference, Orlando, Florida.

CONTACT: NPIRS (IN.) (317) 494-6614

March 6-9, 1990. Fourteenth Vertebrate Pest Conference, Sacramento, California. Sessions will cover forest pests, predator control, and economics, social and political aspects of vertebrate pest management. Papers of interest nationally will be presented to forest managers. The conference will also include an optional field trip on Monday, March 5, which will allow participants to see first hand, some of the pest problems of the Pacific Southwest Region.

For additional information,

CONTACT: HUGH BLACK (WA.) (503) 326-4091

October 8-12, 1990. Agriculture and Forestry Aviation Conference, Winnipeg, Canada. Theme: "Industries' Future Needs." Program: 1) Workshops on Aerial Photography and Remote Sensing, Fire Management; and Aerial Distribution; 2) Poster Sessions; 3) Trade Show; 4) Banquets and Tours.

CONTACT: DAVE SMITH (204) 945-3858

SEASON'S GREETINGS

In 1989, twenty issues of "Short Subjects..." (SSTT) were written and distributed. More than 160 pages have covered 250 topics which have run the gamut from Advisory Memorandums to 2,4,5-T. Reader response has been most gratifying, and requests for copies number in excess of 150. In addition to the primary distribution made by the Washington Office, copies are forwarded by field units to interested persons.

The SSTT "newsletter" will continue in 1990, but, as with any successful endeavor, it will require your continued input and support. Thank you. Editor.

HAPPY NEW YEAR!

Dennis Hamel	Max Ollieu	Larry Gross
Zdenka Horakova	Jack Barry	Pat Skyler
Shelly Witt	Jesus Cota	Luella Pendergraph

SEE YOU IN SAN ANTONIO!

END

APPENDIX APESTICIDE COORDINATORS

To assist forest manager's with their pesticide-use management and coordination responsibilities, the agency supports a network of pesticide specialists and coordinators. The primary personnel for the Washington Office and the Regions and Stations are listed below. Forests and Districts usually have their counterparts. Any changes to this list should be forwarded to the WO,

CONTACT: DENNIS R. HAMEL (VA.) (703) 235-8209

<u>REGIONS</u>	<u>NAME</u>	<u>FTS PHONE NUMBER</u>	<u>ADDRESS</u>	<u>DG ADDRESS</u>
1	Ed Monnig	558-3134	Federal Building P.O. Box 7669 Missoula, MT. 59801	:R01A
2	Curtis O'Neil	776-9593	P.O. Box 25127 Lakewood, CO 80225	:R02A
3	Vacant (Doug Parker)	842-3280	Federal Building 517 Gold Ave. Albuquerque, NM 87102	:R03A
4	Garth Baxter	586-5258	Federal Building 324 25th St. Ogden, Utah, 84401	:R04A
5	John Borrecco	465-2853	630 Sansome St. San Francisco, CA 94111	:R05A
6	Gary Smith	423-2727	P.O. Box 3623 Portland, OR 97208	:R06A
8	John W. Taylor	257-2718	1720 Peachtree, NW Atlanta, GA 30367	:R08A
9	Larry Yarger	362-1899	310 W. Wisconsin Milwaukee, WI 53203	:R09A
10	Ed Holsten	907-271-2575	201 E. 9th Ave. Suite 201 Anchorage, AK 99501	:R10F04A
NA	Charles Hatch	489-4120	5 Radnor Corp. Ctr. Suite 200 100 Matsonford Rd. Radnor, PA 19087	:S24A
Davis	Jack Barry Pat Skyler	460-1715	2121 C 2nd St. Davis, CA 95616	:SCS06

PESTICIDE COORDINATORS (CONT.)STATIONS

INT	Lynn Rasmussen	586-5393	Forestry Sciences 507 25th St. Ogden, Ut 84401	:S22A
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Wednesday

**SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS**

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NATIONAL PESTICIDE-USE MANAGEMENT AND COORDINATION WORKSHOP

The National Pesticide-Use Management and Coordination Workshop is scheduled for the week of January 29, 1990 in San Antonio, Texas. Region 8 has identified accommodations at the Holiday Inn-Riverwalk. Sleeping room rates are \$50 per night. Since per diem for San Antonio is only \$50 for lodging, participants should consider requesting actual subsistence to help defray tax costs. Parking is available for \$4 per day; however, the Hotel is on the Riverwalk (See next item) and most sites are within a short walk.

The Holiday Inn does not have an airport shuttle; however, "Super Van" Shuttle Service is available at the airport, as are taxis. Rates for the Super Van are approximately \$6 one way. Taxi fares are about twice as expensive.

To reserve a room, phone (512) 224-2500 and identify yourself as a participant in the "Forest Service Pesticide Coordination Meeting." This will help ensure an appropriate rate for your lodging. It will also help defray the costs of meeting room. For more information about the workshop or hotel accommodations

**CONTACT: MAX OLLIEU
JOHN TAYLOR**

**(703) 235-8209
(404) 347-2961**

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090-6090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

TOURS OF SAN ANTONIO FOR WORKSHOP PARTICIPANTS

You probably know that San Antonio is the home of the Alamo. But did you know that San Antonio is where chili was invented? It is also the birthplace of the U.S. Air Force, the location for the 1927 film **Wings**, and the tenth largest city in the U.S. Therefore, as you can imagine, San Antonio has a great deal to offer in the way of sightseeing.

Within easy walking distance of the Holiday Inn-Riverwalk is a paved walkway that winds through the city. The Riverwalk, as it is called is characterized by numerous shops and cafes along the river where boats can be rented for riding tours. In addition, within 4-5 blocks of the Riverwalk are the Institute of Texan Cultures, the tower of the Americas, and La Villita (the site of the original Spanish settlement of San Antonio). From Alamo Plaza tourists can catch a green trolley for 10 cents that will take them around the downtown area. The Market Square trolley will take participants to El Mercado, the largest Mexican market outside of Mexico with scores of speciality shops. San Antonio's newest attraction is Sea World of Texas. Express buses leave Alamo Plaza every 15-20 minutes, and the fare is only 85 cents. Information on transportation needs can be obtained by calling VIA at (512) 227-2020.

Many other points of interest in and around San Antonio can be reached by way of Grayline Bus. For example, Grayline Tours offers a **Tour #1, Mission Trail**, that leaves daily at 9:30 a.m.. Tour time: 2 hours, 15 minutes. Fare: Adults, \$9.50; children (5-11 years), \$4.75. Departs from The Alamo. First stop is Mission Concepcion, the oldest unrestored stone Catholic Church in the U.S. Next is Mission San Jose with its fabulous Rose Window, then San Fernando Cathedral, and the Spanish Governor's Palace, furnished with authentic antiques of the period.

Tour #2, Off the Beaten Path, leaves daily at 12:30 p.m. Tour time: 2 hours, 15 minutes. Fare: Adults, \$8.75; children, \$4.40. Departs from The Alamo. Visits La Villita and the unique Arneson River Theater. A tour of a Japanese Tea Garden and Fort Sam Houston are also part of this tour. Also included are a tour of the McNay Art Museum, which features modern French paintings, a Medieval collection, and Spanish arts and crafts.

Tour #3, Trace of History, leaves daily at 3:00 p.m. Tour time: 2 hours, 30 minutes. Fare: Adults, \$10.50; children, \$5.25. Departs from The Alamo. Includes displays of Texas history at the Texan Culture site, a trip to the Mercado, and a visit to the King William District on the way to the Lone Star Brewery and the Buckhorn Hall of Fame.

In addition to the above tours, Grayline offers combination tours that include any combination of the above three with prices from \$16.50 to \$24.00 for adults, \$8.25 to \$12.00 for children.

For additional information or for reservations

CONTACT GRAYLINE TOURS

(512) 240-2826

FOREST SERVICE PRESENTS PHEROMONE PETITION TO EPA

John Kennedy Consultants, Inc., on behalf of the USDA Forest Service (FS) recently submitted a petition to the U.S. Environmental Protection Agency (EPA) requesting modification of certain forest pesticide use registrations. More specifically, the petition requests that EPA exempt pheromones used in non-food and non-feed forestry situations from the requirements of registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. Alternatively, the FS requested that the EPA relax the experimental-use permit length from one year to a period of 3-5 years. In addition, the FS requested relief from the current requirement of a 10-acre limit without an experimental-use permit to be increased to 200-500 acres for non-food and non-feed forestry uses. Especially for programs conducted under the direction of or in cooperation with the agency.

In meetings with Mr. Jim Touhey, Mr. Phil Hutton, and Mr. Willie Nelson (EPA), requests have been made that the FS provide information on the nature of pheromones used in forestry (both lepidopterous and coleopterous) to help EPA in determining if there can be modifications to the full registration requirements for these alternatives to conventional chemical pesticides. The requested data was attached to the petition as appendices.

It is hoped that this petition will be viewed favorably by EPA. It is expected that the petition and related topics will be important points of discussion at the upcoming meeting of the Entomological Society of America in San Antonio, Texas, December 10, 1989 and at the Pesticide-Use Management and Coordination Workshop in San Antonio, January 29, 1990 (See previous items).

For further information on this subject

CONTACT: DENNIS R. HAMEL	(703) 235-8209
MAX OLLIEU	(703) 235-1560
TOM HOFACKER	(703) 235-1560

NATIONAL STEERING COMMITTEE MEETS ON SEED AND CONE TREATMENT PROBLEMS

The National Steering Committee for Aerial Application of Pesticides--Seed and Cone Insects, met in Salt Lake City, Utah, November 8-9, 1989. The Committee reviewed and discussed 1988 recommendations, and 1989 field projects. The Committee also developed recommendations for further improving management of seed and cone insects.

Committee membership was expanded this year to include State and industry cooperators. An invitation was also extended to Canada to send representatives. Committee members were pleased with the progress of field work during 1989, but continues to emphasize the need to adequately support field work. Committee members are especially concerned that there are too few chemical pesticides available for use in seed orchards and that some of these may be in jeopardy of suspension/cancellation by EPA. The Committee recommends that the scope of their activities be expanded to include all methods of managing seed and cone insects, not just aerial application of insecticides. The next meeting of the National Steering Committee--Seed and Cone Insects is scheduled for Portland or Eugene, Oregon, June 12-14, 1990.

For additional information

CONTACT: JACK BARRY	(916) 758-4600
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AERIAL SPRAY OF MOSQUITOES IN WAKE OF HUGO

The 907th TAG, U.S. Air Force Reserve, recently completed a \$500,000 project on 900,000 acres of Hugo-ravaged lands around Charleston, South Carolina. The purpose of the effort was to control mosquito vectors of human disease. A C-130E cargo aircraft was used on the project. It is the same aircraft that was recently used to support Program WIND and to suppress grasshopper in Idaho. The aircraft applied the insecticide dibrom undiluted at 0.5 ounces per acre. Terry Biery, project entomologist, reported 90-95% mosquito control and low bee kill, ranging from 0-2%.

The C-130E used in this effort, typically flies 150 feet above the terrain at 200 knots. It is normally calibrated as having a 3,500 foot swath width; winds and turbulence help to spread the small drops (22 micrometer volume median diameter) downwind into tree canopies. Spraying only in late afternoons, the aircraft can treat approximately 47,000 acres per day.

For additional information on the C-130E and its use in pest management

CONTACT: JACK BARRY

(916) 758-4600

EPA ALTERS LISTS OF INERTS

The U.S. Environmental Protection Agency (EPA) recently notified interested person, by way of the **Federal Register** (Vol. 54, No. 224, Nov. 22, 1989, pp. 48314-6), that they are revising and modifying previously published lists of inert ingredients in pesticide products that are of toxicological concern and require priority testing.

The EPA policy on inerts was first promulgated in 1987 when they categorized inert ingredients into the following four lists according to toxicity:

List 1--Inerts of toxicological concern.

List 2--Potentially toxic inerts, with high priority for testing.

List 3--Inerts of unknown toxicity.

List 4--Inerts of minimal concern.

Since the publication of the policy, and the original lists, EPA has received additional data on some of the listed inerts. EPA scientists have reviewed this information and are modifying their lists accordingly.

Refer to the **Federal Register** mentioned above or

CONTACT: LYNN M. BRADLEY (EPA)

(703) 557-7700

WATER MAY BE UNHEALTHY FOR YOUR HERBICIDES

According to a recent article in **Agrichemical Age**, water quality can have a major influence on herbicide effectiveness.

"Water-soluble post-emergent herbicides, such as glyphosate and the phenoxy, seem to be most affected by water quality. The three characteristics of water quality that can most impact herbicide activity are:

pH--improper acidity or alkalinity.

Concentrations of positive ions that have more than one charge, e.g., Ca^{++} , Mg^{++} , Fe^{++} , Fe^{+++} , Al^{+++} , and Zn^{++} .

Suspended solids, such as organic matter and clay particles."

"Water-soluble post-emergent herbicides generally perform best when the mix is acidic. For glyphosate and the phenoxy, the optimum pH is about 3 to 4--quite a bit lower than many applicators use. Time in the tank is also important, and losses of potency under high pH are particularly serious. Sprays held overnight are often observed to have lost strength by the next day. This is usually related to the use of hard water."

"Loss of herbicide activity due to the presence of multiple-charged positive ions varies with the ratio of ions to herbicide molecules. For example, losses in glyphosate activity have been found to exceed 60 percent at a Ca^{++} /glyphosate ratio of 2.5:1."

"Classifying the positive ions commonly present in spray waters by their relative deactivation effects:

Most Severe-- Fe^{++} , Fe^{+++} .

Severe-- Al^{+++} .

Moderate-- Mg^{++} .

"The fact is, you can greatly enhance the effectiveness of chemical applications with attention to three aspects of water quality: pH, cation concentrations, and solids content. All three factors can be identified and controlled, the first two with specific adjuvants (See next item), and the last with an eye for clear water."

"Attention to water quality will pay off in more consistent herbicidal performance and effectiveness in the future."

For follow up on this discussion

CONTACT: P.W. STAHLMAN (KANSAS) (913) 625-3425

GUIDE TO AGRICULTURAL SPRAY ADJUVANTS USED IN THE U.S.

A newly-revised **"Guide to Agricultural Spray Adjuvants"** lists the majority of spray adjuvants on the market including a brief description, formulation characteristics, application rates, and more.

CONTACT: THOMSON PUBLICATIONS (209) 435-8319

WHERE DOES THE SPRAY GO? - A LITERATURE REVIEW STUDY

A recent study sponsored by Forest Pest Management (FPM--NA/AIPM and WO-FPM) reviewed three decades of data from chemical and biological tests conducted by the U.S. Army at Dugway Proving Ground, Utah. The purpose of the study was to ascertain how much of the aerially-released spray (volume) was actually accounted for on samplers. The Forest Service has been concerned about the high percentage of spray that is unaccounted for or "missing" from its aerial application projects. This percentage has been observed to be as high as 70-80 percent. Douglas Boyle, a former technical director at Dugway, reviewed and summarized approximately 50 reports of field tests conducted by Dugway. His two-volume report "Spray Accountancy Review - A Literature Search" shows that the U.S. Army accounts for a much higher percentage of its aerial spray volume, than the Forest Service. The higher loss in Forest Service programs may result from deposition on forest surfaces (e.g., bark, twigs, soil, rocks etc.) not currently being evaluated. The U.S. Army tests were conducted over flat open terrain while most Forest Service activities are over more complex (e.g., mountainous) terrain. Also the U.S. Army uses an assortment of ground and elevated samplers (sometimes elevated several hundred feet on balloons) to obtain a "total" accountancy of the spray. The bottom line is that technology is available, as demonstrated by the U.S. Army, to account for a high percentage of the spray and the FS needs to followup.

For copies of the reports or more information

CONTACT: JACK BARRY	(916) 758-4600
DICK REARDON	(304) 291-4891

TECHNOLOGY AND TEAMWORK--A POTENT COMBINATION

A critically-needed Douglas-fir seed crop was recently successfully protected by a combination of technology and teamwork. John DeWitz, silviculturist, Oakridge District, Willamette National Forest, requested Forest Pest Management (FPM) assistance to control cone and seed insects that threatened the 1989 Heather Seed Orchard cone crop. FPM used the FSCBG aerial application spray model to plan the aerial treatment of azinphos-methyl (Guthion) and esfenvalerate (Asana XL), a third-generation synthetic pyrethroid. The use of the FSCBG model included establishment of release height, swath width, nozzle type and placement, aircraft speed, and buffer zone offsets. Application parameters were selected that maximized deposition into the canopy and minimized off-target movement of the spray. Participants in this cooperative project included R-6 (Willamette NF and RO), R-8, the Missoula Equipment Development Center, the Pacific Northwest Station, Continuum Dynamics, Inc., and WO-FPM (Davis). John DeWitz reported that preliminary results suggest that the harvest will satisfy needs for this elevation of Douglas-fir through 1990.

For further information

CONTACT: ROGER SANDQUIST	(503) 326-2727
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FOREST NURSERY PESTS HANDBOOK PUBLISHED

Forest Nursery Pests, Agriculture Handbook No. 680, was recently published by the Forest Pest Management Staff in the Washington Office. This handbook was prepared by a team of research scientists and pest management specialists who are experts in the field of identifying and controlling pests of forest tree nurseries. Included in the Handbook are chapters discussing the diagnosis of pest problems, integrated nursery management alternatives, soil-pest relationships, pesticide regulations, conifer insects and diseases, hardwood insects and diseases, the benefits and practical application of mycorrhizae in forest tree nurseries, miscellaneous pest problems, and the evaluation of nursery losses due to pests.

Copies of this handbook are being distributed to Forest Service Ranger Districts, Supervisor's Offices, and Regional Offices. Also to receive gratis copies are State Foresters, forestry schools, and research stations. Additional copies can be purchased from the Government Printing Office (GPO). Identify the publication as GPO No. 001-001-00639-4

**CONTACT: GOVERNMENT PRINTING OFFICE
SUPERINTENDENT'S OFFICE
NORTH CAPITOL AND H STREETS, NW
WASHINGTON, DC 20401**

STREAMS IN 10 STATES SAID TO BE TAINTED WITH HERBICIDES

According to the U.S. Department of the Interior's Geological Survey (USGS), it has found detectable quantities of triazine herbicides in 55% of 150 streams analyzed in 10 midwestern States. Stream sampling was done primarily to discover the extent of herbicide contamination in surface waters in States with heavy agricultural chemical use.

The USGS says it expected to detect some herbicides but not the widespread occurrences that were found. A second reason for the study was to test a proposed analytical procedure for herbicides that uses a low-cost, enzyme-based immunoassay for triazine compounds in water.

Using this technology, the USGS says that 44 samples exceeded EPA proposed drinking water standards for alachlor, 71 exceeded health advisories for triazine, 15 were too high for cyanazine, and five had high levels of simazine.

For followup

CONTACT: U.S. GEOLOGICAL SURVEY (202) 648-4000

ASSESSING RISK: A RISKY BUSINESS

The following commentary appeared in the Sunday, November 26, 1989, **Washington Post**. It was written by Ms. Carole Sugarman who examines contemporary ideas that are changing our lives and expanding our intellectual frontiers. In this article Ms. Sugarman looks at what she considers to be a coming battle over pesticide standards in light of how little we really know about risk assessment.

"Once Again, Congress is trying to decide what will kill you. The specific issue this time is the regulation of pesticide residues in food; and as the debate proceeds, plenty of statistics and double-decimal-point figures will be cited on all sides. But in this case--as in so many of our efforts to legislate chemical safety levels--the only thing certain to be true is how little we really know about whether a substance is dangerous, safe, iffy or anything in between.

"The public is generally unaware of how imprecise a science risk-assessment is. Most people simply assume that numerical estimates (i.e., "the risk of Pesticide X is three cancers per million exposures") are based on actual recorded cases in the population--despite the unlikelihood of "killed by kumquats: appearing on a coroner's report. In fact, the estimates (extrapolations from rodent studies that are mathematically manipulated to arrive at human risk levels) are a matter of longstanding controversy in the scientific community. Of course, even arbitrary standards are better than none and they do provide a framework for regulatory decisions. But many public-health experts--including some Environmental Protection Agency officials themselves---complain that the current system is far from ideal.

"The problem arose again last month when the Bush administration announced its intentions to overhaul the nation's pesticide laws. Two other bills pending in Congress take different approaches. All three plans attempt legislative definitions of "negligible risk"--that is, legal maximum levels for a pesticide residue remaining on food.

"Unfortunately, the whole effort is so mired in data deficiencies and definitional discrepancies that it's impossible to predict accurately what would happen to chemicals currently on the market under any of the plans, or precisely what impact the proposals would have on public health.

Three Scenarios:

The Bush plan. Under the administration proposal, a risk would be :negligible: if it was estimated to cause between 10^5 and 10^6 (that is from a few cases per 100,000 to a few per million) additional cancer cases over a lifetime of exposure. The plan would not attempt to codify this range into law but would leave it up to EPA to interpret the guidelines based on the latest scientific findings. (A risk of 10^6 is usually referred to as a "one-in-a-million" risk of cancer, though the EPA considers anything up to four per million as equivalent. The number of cases is not as important as the order of magnitude.) These risks would be weighed against the presumed benefits of a pesticide, such as the economic effects on growers and consumers.

These are approximately the same standards now in force. EPA regulators usually draw the negligble-risk line at 10^6 while retaining the flexibility to go closer to 10^5 if it deems the benefits of a pesticide to be great. There is no law that requires EPA to follow these numbers. The "one-in-a-million"

benchmark is merely an arbitrary figure currently in vogue among risk assessment experts.

(Linda Fisher, EPA's assistant administrator for pesticides and toxic substances, interprets the Bush proposal as simply a reaffirmation of the agency's present policy. Fisher believes the administration "blew it" in communicating this fact, since critics subsequently accused the administration of weakening the current standard.)

Like the other plans the "negligible risk" criterion would apply to all foods, nullifying the 1958 Delaney Amendment to the Food, Drug and Cosmetic Act, which applies a much more stringent standard to processed foods. While the EPA uses a risk benefit approach to regulating pesticides in raw foods, the Delaney Amendment bars any cancer-causing substances from processed foods, a zero-risk approach. Ironically, the amendment--under which many chemicals then in use were "grandfathered," or exempted from the new standard--has inadvertently prevented many more recent substances that do not meet the strict standard from being approved while leaving pre-Delaney chemicals on the market that may be far more toxic. The National Academy of Sciences, in its 1987 report "Regulating Pesticides in Foods," concluded that a consistent negligible-risk standard (not including benefits) would eliminate 98 percent of existing dietary oncogenic risk from 28 pesticides.

The Kennedy-Waxman bill. Legislation introduced by Sen. Edward Kennedy (D-Mass.) and Rep. Henry Waxman (D-Calif.) defines "negligible risk" as a risk of cancer from a life-time of exposure of no more than one in a million. This number would be written into the law. The bill also stipulates that the calculation of cancer risk must account for variations in exposure occurring over a person's lifetime; for example, children consume far more of certain kinds of produce than adults.

No benefits would be considered. Instead, if a pesticide were found to exceed the one-in-a million level, chemical manufacturers and farmers would be given four years to reduce risk by measures such as decreasing the amount, frequency or concentration of the chemical. In addition, each crop would have to meet a second standard of "aggregate negligible risk," meaning that the collective total risk of all chemicals on it could not exceed one-in-a-million.

The De la Garza bill. Kika de la Garza (D-Tex.), Chairman of the House Agriculture Committee, introduced legislation that would leave the definition of negligible risk up to EPA.

Instead of weighing risks against benefits, the bill would set up a risk-risk match, not a trade-off "between tumors and dollars." as one congressional aide put it. In other words if the risk of a chemical is higher than negligible, it would be weighed against the dietary risks to consumers of not having the food which that pesticide makes possible. It is unclear how this would work in the real world. If the absence of a major fungicide used on citrus crops would result in a shortage of oranges, could the chemical stay on the market to stave off scurvy?

Were the multiple proposals not confusing enough, environmentalists and public-health activists can't even agree with one another. None likes the Bush plan, but there is by no means unanimous approval about who has the better idea. Some groups take the zero-risk approach, advocating that no risk is acceptable, even a negligible one. (EPA and the Food and Drug Administration regard "negligible" as the equivalent of no risk at all.) Other activists back the Kennedy-Waxman plan, arguing that the bill has a built-in risk/benefit

approach: The risk the public is willing to take for the benefits of pesticide is no greater than "negligible."

How Safe Is Safe?

While policymakers and various partisans engage in verbal exercise worthy of medieval scholastics, the public is left trying to understand the big picture--often without the basic tools to do so. To evaluate the merits of the legislative proposals, it is necessary to understand the complex contest in which risk-assessment takes place.

For a start, epidemiological evidence linking cancer in humans with various environmental pollutants has only been demonstrated convincingly in about two dozen cases such as cigarette smoke and asbestos. Science still doesn't know a lot about the various mechanisms that cause cancer or form tumors, and there are obvious moral prohibitions on testing potentially carcinogenic pesticides in food on real people. Instead, scientists use rodents. (Rabbits and dogs are used for other kinds of toxicity testing but rodents are the animal of choice for cancer.) The EPA's risk-assessment model consists of four parts. While this may sound reassuringly straightforward and scientific, there are a lot of pieces missing, adding up to a layer cake of uncertainties:

- o Rodent surrogates. Cancer in animals may or may not be produced by the same mechanisms that affect humans. What's more, different species of rodents may have different reactions to the same chemical. What does it mean if the same substance gives male mice bladder tumors and female rats liver tumors? Will human consumers get both? Neither? How dependably can we extrapolate from high exposures fed to rodents over a lifetime to low exposures over a life time in humans? (And which humans, since individual sensitivities vary widely?) There are no definitive answers to these questions.

- o Dietary patterns. The standard for determining the amounts and types of foods Americans eat comes from the U.S. Department of Agriculture's food consumption surveys from 1977-78--patterns in place before a surge in consumption of fresh fruits and vegetables (along with widespread concern about cholesterol) revolutionized the nation's diet.

- o Missing information. In addition, pesticide residue data generally come from EPA's tolerance--the maximum allowable levels--which most likely overestimate the actual amount present on the food at the time of consumption. For most pesticides, reliable residue data still do not exist. And the data that are available usually present the residue when the produce leaves the farm, not when it's in the supermarket.

- o Potential bias. Many scientists, regulators and--not surprisingly--chemical manufacturers believe that current risk-assessment methods vastly overestimate an actual risk because of the upper-boundary assumptions that are plugged into calculations. Many environmentalists and public-health activists, on the other hand, believe the risks are underestimated because of the outdated human consumption data and the fact that EPA has not historically delineated subpopulations that eat more of a given food than others.

But since very few of the assumptions are definitive, there are many ways in which they can be jiggled to reach completely different conclusions about risk.

In a forthcoming book, "Chemicals in the Human Food Chain," Sandra O. Archibald, an assistant professor in the Food Research Institute at Stanford University, and Carl K. Winter, an extension toxicologist from the University of California at Riverside, re-assessed the risks posed by pesticides used on several foods that were examined in the National Academy of Sciences' 1987 report.

Deliberately using excessive assumptions in order to set priorities for improved regulation, NAS calculated that tomatoes constituted the largest oncogenic risk of the dozens of foods it investigated. The study used worst case estimates, assuming that all pesticides registered for tomatoes had been used on all of the acreage and that the residues were at the tolerances, or maximum allowable levels.

Archibald and Winter recalculated the risk from tomatoes, using actual residue data from FDA's Los Angeles laboratory. Instead of NA's estimate of 859 additional cancers per million, Archibald and Winter got 0.32 additional cancers--2,600 times less risk. (The two had to slightly adjust NAS's risk number because they didn't have residue data on all of the pesticides registered for tomatoes.)

As uncertain as the risk-assessment side of the equation may sound, the benefit-assessment side, critics insist, is even more ambiguous. Presumed benefits, they contend, often consist of nothing more than a conglomeration of ad hoc, anecdotal evidence from chemical companies, Department of Agriculture extension agents and farmers that fails to reach anywhere near a precise conclusion.

For example, while company records can be used to determine how much of a specific chemical is sold, only the state of California keeps track of how much is actually used on any given crop. That makes it difficult to assess the impacts of not using a chemical or switching to an alternative.

Moreover, there is no agreed-upon formula that says, in effect, if you accept this much risk, you should get this much benefit. EPA makes that determination as best it can based on the strength of both sides of the equation--a task call "risk management." Yet the system makes EPA extremely vulnerable to lawsuits if it wants to ban a chemical based on comparatively weak information. As one food-industry attorney put it, "How can EPA defend putting 1,000 people out of work when the risk numbers are so mushy?"

A Humane Standard

That and similarly maddening questions, however, are not beyond our ability to answer. Kennedy and Waxman are right: Weighing human health against economic benefits is inappropriate. Yet ignoring benefits assumes that the public doesn't want any. Human health should be judged in terms of human benefit and under conditions acceptable to consumers. But defining human benefit may be even harder than defining grower benefit; and asking the public for that advice is hampered by difficulty in communicating the risks.

Instead, efforts should focus on improving data. Much of needed information--such as actual residue levels--is quite literally at our fingertips. It's not as if it didn't exist; we just haven't demanded it. This doesn't mean, of course, that everyone would interpret the data similarly. But it would give risk-assessment more credibility, the public more confidence, and parties on all sides less latitude for sloganeering."

**SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS**

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NPIRS USERS CONFERENCE SCHEDULED

The Seventh Annual Conference of Users of the National Pesticide Information Retrieval System (NPIRS) will be held February 19 to 22, 1990, in Orlando, Florida. The conference will be held at the International Drive Holiday Inn. An agenda will be distributed soon, but, potential participants are encouraged to block out the week of February 19 on their calendars.

This year's NPIRS Users Conference will feature outside speakers, user presentations, demonstrations of new databases, workshops, advanced training, and an NPIRS User Group Meeting.

To request a copy of the agenda

CONTACT: NPIRS--PURDUE UNIVERSITY

(317) 494-6614

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

BIOTECH BULLETIN BOARD

A new computerized information service on agricultural/environmental biotechnology is available 24 hours a day, seven days a week, using a toll-free telephone number and a computer modem. The National Biological Impact Assessment Program (NBIAP) Agricultural/Environmental Biotechnology Bulletin Board combines a news report system with direct access to several databases.

Updated monthly, news reports include information on such topics as proposed legislation, changes in regulations, patents, new publications, announcement of grant availabilities, significant research findings, industry news, international developments, and a FORUM section. The databases provide access to information on a range of topics relevant to biotechnology. These include regulations and guidelines, information sources, biosafety committees, current literature, field test approvals, product licenses, companies, State information, and patent abstracts. The Bulletin Board also serves as a vehicle for electronic messages.

To use the Bulletin Board, dial 1-800-NBIAPBD (free call) or (703-231-3858) (toll call) on your computer modem. Type your name and location, choose a password, and follow the prompts. The NBIAP Agricultural/Environmental Biotechnology Bulletin Board is a service of the Virginia Polytechnic Institute and State University, in cooperation with USDA. For additional information

CONTACT: MS. PAM LOVE (202) 382-1533

NURSERY PEST MANAGEMENT EIS PUBLISHED

The Pacific Northwest Region (R-6) recently published a Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) for Nursery Pest Management in Oregon and Washington.

Forest Service nurseries in R-6 produce approximately 85 percent of all conifer seedlings required for reforestation projects on National Forests in those States. An integral part of R-6 nursery operations is the control of pests. Pests that pose problems for seedling production are weeds that compete for nutrients and light, insects and diseases that damage seedlings, and small animals such as mice and birds that eat seed or seedlings. Chemical control measures are one means of controlling these pests.

In 1984, herbicide use was enjoined on National Forest lands in the Pacific Northwest Region until a worst-case risk analysis could be prepared. A risk analysis was completed and mediation followed. By stipulated agreement, the court injunction banning the use of herbicides for vegetative management was lifted for uses other than nurseries on May 24, 1989.

The present FEIS addresses the risks associated with pesticides in nursery management. Based on the FEIS, it is the decision of Regional Forester John F. Butruille to implement an alternative that reflects a desire to protect human health, minimize adverse impacts, and ensure that nurseries continue to produce appropriate quantities of high quality seedlings at reasonable cost. The decision stresses his intention to prevent or minimize nursery pest problems. The selected alternative permits the use of all control methods; however, biological and cultural methods will be preferred. Pesticides will be used only when other methods are not available, effective, efficient, or when the cost is prohibitive. The FEIS and ROD can be implemented in 30 days unless an appeal is filed. For more information

CONTACT: GEORGE MATEJKO (326) 423-7755

CLASSIFICATION OF CARCINOGENS

Recent questions about EPA's classification system for carcinogens, prompts us to provide the following summary. As new pesticides go through the registration process and old materials are reviewed and reregistered, EPA and the Scientific Advisory Panel review each active ingredient for oncogenic or tumorigenic potential. The EPA classification system for carcinogens is adapted from a similar system developed by the International Agency for Research on Cancer. It is used by the EPA to classify all potential human carcinogens, not just pesticides. The purpose of the system is to characterize a compound's carcinogenic hazard to humans. Substances are classified based on factors such as the results of mutagenicity tests, consideration of any negative oncogenicity results, the types and diversity of tumors induced, the structural similarity of the compound to other carcinogens, and whether positive results have been replicated.

Group A - Human Carcinogens. Based on sufficient evidence from epidemiologic studies that support a causal association between exposure and cancer.

Group B - Probable Human Carcinogens:

B1 - Sufficient evidence of carcinogenicity from animal studies with limited evidence of carcinogenicity from epidemiologic studies.

B2 - Sufficient evidence of carcinogenicity from animal studies with inadequate or no epidemiologic data.

Group C - Possible Human Carcinogens: Based on limited evidence of carcinogenicity in the absence of human data.

Group D - Not classifiable as to human carcinogenicity. Inadequate or no human and animal data for carcinogenicity.

Group E - Evidence of non-carcinogenicity in humans. No evidence of carcinogenicity in at least two adequate animal tests in different species and adequate epidemiologic studies.

For followup

CONTACT: ZDENKA HORAKOVA

(703) 235-8209

FMC URGED TO RETAIN CARBOFURAN USE ON PINE SEEDLINGS

Weyerhaeuser has urged FMC Corporation to retain the use of granular carbofuran on pine seedlings because of its importance to forest regeneration programs. In a letter, Weyerhaeuser said the company had tested substitute products and none of them "offer near the advantages of Furadan." FMC proposed to cancel use of Furadan on pine seedlings in a risk reduction plan offered to EPA in August. Weyerhaeuser noted that if FMC's concern with the pine seedling registration was that it allowed more than 1 lb./acre application rate, "You should know that the only place we use Furadan granules is on newly-planted seedlings, at a rate of 0.5 grams a.i. per seedling, at a maximum planting density of 700 trees per acre." "This translates to a maximum rate of 0.77 lbs. per acre of active carbofuran...it is also important to understand that this operation occurs on highly prepared sites..." Thus, avian and wildlife populations are not likely to be at risk and FMC is urged to alter its label accordingly to cover the low-dose applications of Furadan on pine seedlings.

PESTICIDE WASTE DISPOSAL

According to USDA's Office of Information, a leading pesticide manufacturer (Ciba-Geigy of Greensboro, N.C.) has teamed up with Department personnel to further develop a system to safely decontaminate pesticide wastewater. The new treatment technology uses ozone gas coupled with soil micro-organisms to break down unused pesticides before disposal. The goal is to turn unused pesticides into innocuous carbon dioxide rather than convert them to other toxic compounds and burn them, says chemist Cathleen J. Somich of USDA's Agricultural Research Service in Beltsville, Md. "We don't want to take the risk of substituting air pollution for water pollution," she said.

Steve Dumford, director of new technology and basic research for Ciba-Geigy, said his company is getting ready to start testing a second prototype of the new technology. "We want to see if it can handle larger volumes of pesticides and at higher concentrations," he said.

Although the technology is far from the commercial stage, Dumford envisions the waste disposal device being transported from site to site to treat pesticides and wastewater left over from cleaning pesticide application equipment. It might be operated by a local government agency, a farmer's cooperative, or pesticide distributors, he said.

Philip C. Kearney, originator of the treatment, said that this type of technology might be used from everything from lawn care chemicals to heavy industrial wastes. The idea is to prevent chemicals from entering the nation's waterways.

A year ago, Somich and colleagues tested the prototype, with seed money from Ciba-Geigy, on a University of Maryland farm at Beltsville. They processed five 30-gallon batches of pesticide "soup"--detergent and water used to clean four herbicide spray tanks. In three days, the two-step treatment destroyed 46 to 96 percent of the herbicides in the mixture.

Somich describes the treatment this way: "First, we pump ozone gas through the wastewater in one chamber. As the bubbles contact the pesticides, they gradually break them down into harmless biodegradable byproducts," Somich said. "Then we transfer the water to another chamber to filter it through soil where native micro-organisms break down the byproducts, leaving little besides water, ammonia, and carbon dioxide."

Some pesticides are resistant to microbial digestion, but the ozone treatment oxidizes and makes them more biodegradable, she said. "We're working to further improve the soil microbe part of the treatment." Another improvement the team is seeking is a "super bug" that will metabolize the pesticide byproducts more efficiently. The scientists had earlier success with a soil microbe that could "eat" a single pesticide in wastewater, but the microbe was inhibited in the "soup."

Somich said some researchers have equipment that collects and evaporates wastewater to make a pesticide "cake" that can later be incinerated. But, most users do not have the kind of equipment needed for this process. Therefore, it is hoped this new technology will help to dispose of pesticides and prevent groundwater contamination simultaneously.

For details of this new pesticide waste disposal technology

CONTACT: CATHLEEN J. SOMICH

(301) 344-3233

NEW WEED-KILLING TECHNOLOGY UNVEILED

Crop Genetics International, Corp. of Hanover, Maryland, expects to begin field tests next year of a new bioherbicide designed to reduce the use of chemical herbicides. John B. Henry, chairman and chief executive officer, said that greenhouse testing this year at the company's research center produced such encouraging results that CGI applied for a U.S. patent on the technology.

Registered under the trademark of X-Tend, the technology combines a small amount of chemical herbicide with highly concentrated bacteria that attack and kill weeds. The diluted chemical puts stress on weeds without killing them, greatly increasing their susceptibility to the bacteria. The bacteria kill the weeds, then enter the soil and have no further effect.

CGI believes this biological solution has broad application and they are excited about their entry into the herbicide market. They also believe that this bacteria-based technology complements the company's biopesticide product lines, including its InCide plant vaccine technology. CGI hopes its new bioherbicide will cut costs of chemical herbicides and curb the chemical contamination of soil and water.

For further information on this new technology

CONTACT: CROP GENETICS INTL. (301) 621-2900

DFTM POST-TREATMENT SUMMARIES

In 1987 about 7,000 acres on the Plumas NF, Lassen NF and intermingled private lands were defoliated by the Douglas-fir tussock moth (DFTM). After evaluating the outbreak and treatment alternatives, the Plumas Forest Supervisor decided to conduct a field/pilot test using *Bacillus thuringiensis* (Bt). At the time of the decision Bt was only registered at 8 BIU/acre for DFTM. Therefore, a test was conducted to compare the efficacy of a 16 BIU/acre dose applied at either 128 oz/acre or 64 oz/acre. Each treatment was replicated four times with 5200 acres being treated. Population reductions ranged from 88.6 percent at 64 oz/acre to 92.5 percent at 128 oz/acre. Control blocks had 78.2 percent population reduction. The prespray larval densities in all blocks were about 500 larvae per 1000 square inches of foliage.

In the fall of 1988 an additional 80-90,000 acres were found to be infested with DFTM. The results of the NEPA analysis led to the decision to treat the outbreak with 16 BIU of Bt (Thuricide 32 LV, the only formulation registered at that dose in California at the time of the decision). The objective of the operational project was to reduce tree mortality by reducing the DFTM population by 80%. Because of the results of the 1987 field/pilot test it was decided to treat the population at 50% dispersal instead of waiting for 10 days after hatch and dispersal (the old application timing). Application rate was 128 oz/acre with an atomization of 162 to 190 microns. Population reductions in treatment areas ranged from 88.4 to 90.1 percent. The early application provided substantial foliage retention. It is estimated that 50% of the new foliage on the majority of the 83,871 acres treated was protected. Egg mass surveys conducted in October found only 3 egg masses after searching for a total of 40 person-days, therefore, it can be concluded that the treatment along with natural predation has caused a total collapse of this DFTM outbreak.

For additional information

CONTACT: JOHN NEISESS

(415) 705-2660

PESTICIDE SAFETY AND TRAINING MATERIALS CATALOG AVAILABLE

The U.S. Environmental Protection Agency (EPA) recently sponsored the development of a directory that lists currently available pesticide safety and training materials. The catalog is intended for anyone who works with pesticides. The purpose of the catalog is to give the public access to pesticide safety and health information; therefore, training materials that focus on specific types of pests or that focus specifically on certification or recertification of pesticide applicators are not included.

The catalog has five sections:

Introduction and Description of Catalog Layout, How To Use This Catalog,
Guide to Materials,
Complete List of Materials, and
Appendix.

The **Guide to Materials** is organized by sub-headings into which the materials are clustered by content. The sub-headings are:

Contaminated Laundry;
Disposal, Storage, Spills, & Fires;
Equipment & Calibration;
Farmworker Specific Material;
Handling Safety & Clean-up;
Health Care Providers;
Home Pesticide Use;
Personal Protection;
Poisoning & First Aid;
Regulatory Issues;
Specific Crop or Work Site;
Water Concerns; and
Specific Pesticides & Specialized References

The **Guide to Materials** is in chart format, with the titles of the materials appearing in the left margin, followed by a series of X's under column headings which describe the characteristics of the material. The column headings are:

State of Origin of Materials
Item Number (for reference to Complete Listing)
Title of Material
Target Audience
Language (English, Spanish, or Both)
Media Type (pamphlet, slides, video, poster, book, other)

The **List of Materials** section contains succinct summaries of the training materials. The publications appear in alphabetical order by title and have the following format:

Item number,
Title of Material,
Address of Source,
Comments (cost, phone number, date published, etc.)
Target Audience,
Language and Media Type,
Abstract of Contents, and
Editorial Comments.

The **Appendix** contains a list of current State Pesticide Information Centers (including both the State Lead Agency and the State Pesticide Training Coordinators), Poison Control Centers, and regional Environmental Protection Agency offices.

The Pesticide Safety and Training Materials Catalog is available from the Pesticide Farm Safety Center, Division of Occupational and Environmental Medicine, Department of Internal Medicine, University of California at Davis, Davis, California, 95616.

CONTACT: CAROL PARKER

(703) 557-7666

WORKER PROTECTION STANDARD TRAINING MATERIALS

To assist in the implementation of the revised Worker Protection Standard (40 CFR part 170), the Environmental Protection Agency is proposing to develop numerous training materials. EPA has a cooperative agreement with the University of Florida Extension Service to modify existing training materials and to develop new training materials needed to implement Part 170. Additional funding is being sought in fiscal year 1990 to aid in the development, reproduction and distribution of the training materials.

The materials proposed to be developed include those directed to:

AGRICULTURAL EMPLOYERS

Brochure to inform farm employers of their responsibilities.

Brochure to inform commercial forestry employers of their responsibilities.

Brochure to inform nursery employers of their responsibilities.

Brochure to inform greenhouse employers of their responsibilities.

Brochure to inform employers of commercial pesticide handlers of their responsibilities.

Brochure to inform agricultural labor contractors of their responsibilities (in English and Spanish).

Slide/tape (& video tape of slide/tape) describing the responsibilities to employers of agricultural workers on farms, commercial forests, nurseries, greenhouses, and to agricultural labor contractors.

Slide/tape (& video tape of slide/tape) describing the responsibilities to employers of pesticide handlers on farms, commercial forests, nurseries, and greenhouses, including employers of commercial pesticide handlers.

EMPLOYERS OF AGRICULTURAL WORKERS

Brochure describing requirements for providing Training to agricultural workers.

Brochure describing requirements for providing Decontamination Sites for agricultural workers.

Brochure describing requirements for providing Notification (oral and posted warning signs) of Pesticide Applications to agricultural workers.

Brochure describing requirements for providing Specific Pesticide Information to agricultural workers.

Brochure describing requirements for providing Emergency Information and Transportation to agricultural workers.

Brochure describing requirements for Reentry of agricultural workers on farms.

Slide/Tape (& video tape of slide tape) describing requirements for Reentry of agricultural workers on farms.

Brochure describing requirements for Reentry of forestry workers in commercial forests.

Slide/Tape (& video tape of slide tape) describing requirements for Reentry of forestry workers in commercial forests.

Brochure describing requirements for Reentry of workers in nurseries.

Slide/Tape (& video tape of slide tape) describing requirements for Reentry of workers in nurseries.

Brochure describing requirements for Reentry of workers in greenhouses.

Slide/Tape (& video tape of slide tape) describing requirements for Reentry of workers in greenhouses.

EMPLOYERS OF PESTICIDE HANDLERS AT AGRICULTURAL SITES

Brochure describing requirements for Decontamination Sites for handlers.

Brochure describing requirements for Training of handlers.

Brochure describing requirements for Providing, Cleaning, and Maintaining of Personal Protective Equipment to pesticide handlers.

Slide/Tape (& video tape of slide/tape) describing requirements for Providing, Cleaning, and Maintaining of Personal Protective Equipment to handlers.

Brochure describing requirements for providing Emergency Information and Transportation to handlers.

Brochure describing requirements for Working Alone with Highly Toxic Pesticides.

Brochure describing requirements for Applying Fumigant Pesticides in Greenhouses.

Brochure on "How To Select Chemical-Resistant Gloves".

Brochure on "Recognition, Avoidance, and First-Aid for Heat-Induced Illnesses".

Brochure on "Respirator Selection, Fit-testing, Use, and Maintenance".

Brochure on requirements of employers of commercial pesticide handlers as related to cholinesterase monitoring.

AGRICULTURAL WORKERS

Handbook for Farmworker Safety in English and Spanish.

Slide/Tape for Farmworker Safety in English and Spanish.

Video Tape for Farmworker Safety in English and Spanish.

Poster for Farmworker Safety in English and Spanish.

NON-CERTIFIED HANDLERS

Handbook for Non-certified Mixer/Loaders/Handlers in English and Spanish.

Slide/Tape for Non-certified Mixer/Loaders/Handlers In English and Spanish.

Video Tape for Non-certified Mixer/Loaders/Handlers In English and Spanish.

Poster for Non-certified Mixer/Loaders/Handlers In English and Spanish.

ENFORCEMENT OFFICIALS

Brochure on advice for enforcement officials in implementing and interpreting the revision of Part 170 and strategies for enforcement.

Workshops for Enforcement Agents on implementing and interpreting the revision of Part 170 and strategies for enforcement.

PHYSICIANS SUPERVISING CHOLINESTERASE MONITORING

Brochure on advice for enforcement officials in implementing and interpreting the revision of Part 170 and strategies for enforcement.

Brochure containing the official EPA Guidelines for cholinesterase monitoring.

WORKER PROTECTION STANDARD TRAINERS

Workshops designed for any persons who intend to conduct training or distribute information about the revision of the Worker Protection Standard. May include EPA regional personnel, State Cooperative Extension personnel, industry and commodity organization personnel, farmworker organization personnel, and other interested persons.

SUMMARY OF GENERAL PESTICIDE TRAINING MATERIALS 1984-88

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The following list was compiled by John Wilson, North Carolina State University and Burton Evans, Univ. of Georgia, Athens, Georgia. It is a result of a survey conducted in August 1988. Unless otherwise indicated contact the State Pesticide Coordinator in the respective State if you want to order these materials.

I. SLIDE/SCRIPTS-SLIDE/TAPES

STATE	CONTACT	TITLE	COST	AUDIENCE
CA	Patrick Marer	Safe Handling of Pesticides	\$62.35	Farmer, Commercial Applicator
CA	Patrick Marer	Safe Handling of Pesticides (in Spanish)	62.35	Farmer, Commercial Applicator
FL	Norman Nesheim	Pesticide Laws/Regulations	21.00	All
FL	Norman Nesheim	Understanding Pesticide Labels	30.00	All
FL	Norman Nesheim	Protective Clothing	35.00	All
FL	Norman Nesheim	Handling, Storage, Disposal	34.00	All
FL	Nornan Nesheim	Pests and Pest Control	65.00	All
FL	Norman Nesheim	Are You Spraying More than Bugs?	35.00	All
FL	Norman Nesheim	Demonstration/Research	46.00	D/R Specialty
GA	Burton Evans	Application Equipment	41.00	Private Appl. Cer- tification
KY	C. M. Christensen/ L. D. Rodriguez	Wood Destroying Insects 11:36	Free/ lend	Wood Pre- servative Users
KY	C. M. Christensen/ L. D. Rodriguez	Degradation of Wood by Fungi 9:17	Free/ lend	Wood Pre- servative Users
KY	C. M. Christensen/ L. D. Rodriguez	Wood Preservative Equipment and Application Techniques 16:36	Free/ lend	Wood Pre- servative Users
KY	C. M. Christensen/ L. D. Rodriguez	Tree Diseases 20:00	Free/ lend	Foresters

STATE	CONTACT	TITLE	COST	11 AUDIENCE
KY	C. M. Christensen/ L. D. Rodriguez	Forest Insects 26:00	Free/ lend	Foresters
PA	Winand Hock	How to Handle Chemical Spills	---	General
PA	Winand Hock	Targeted Pesticide Applications for Shade and Ornamental Trees	---	Ornamental /Turf
WI	Roger Flashinski	Calibration Methods and Problems (1.1)	45.00	Farmers, Appl.

11. VIDEO TAPES

AL	Steve Brown	Private Pesticide Applicator Training (20 min.)	1 blank tape	Farmers
CA	Patrick Marer	Pesticide Safety in Greenhouses	40.00	Managers, Comm. Appl.
CA	Patrick Marer	Training Greenhouse Workers to Handle Pesticides Safely	40.00	Non-cer- tified Priv. Appl.
CA	Patrick Marer	Pesticide Safety in Greenhouses (in Spanish)	40.00	Managers, Commercial Appl.
CA	Patrick Marer	Training Greenhouse Workers to Handle Pesticides Safely (in Spanish)	40.00	Non-Cert. Private Appl.
FL	Norman Nesheim	Farmworkers Pesticide Safety Training Program	12.00	All
FL	Norman Nesheim	Pesticide Safety for Non- Certified Mixer/Loaders/ Applicators	12.00	All
MO	James Jaiman	Certification Training for Private Applicators Trainers	Free PAT	Private Appl.
NC	John Wilson	Safe Use of Pesticides for Structural Applicators (NCDA)	20.00	Structural
NC	John Wilson	Protecting Water/Protecting Crops	27.50	General
MS	Ruth Morgan	Pesticide Certification	---	Farmers, General
PA	Winand Hock	On Target (Nat. Arb. Assoc.)		3 parts

STATE	CONTACT	TITLE	COST	AUDIENCE
PA	Winand Hock	Pesticide Handling for the Lawn Care Industry	---	Lawn Care
WI	Roger Flashinski	Calibrating Your Field Spray	35.00	Farmers, Comm. Appl.(1.1)
III. TRAINING MANUALS				
AL	Steve Brown	Commercial Pesticide Applicator	5.00	P. Health, Ag-Plant, D&R, Seed, Aerial, Forest, Ground
AL	Steve Brown	Private Pesticide Applicator Training Manual	Free	Private Appl.
CA	Patrick Marer	The Safe and Effective Use of Pesticides	30.00	All
FL	Norman Nesheim	Aerial Application Manual	10.00	Comm. Appl.
FL	Norman Nesheim	Pesticide Applicator Training Update	1.00	All
GA	Burton Evans	Wood Preservation and Wood	2.00	Comm. Appl.
GA	Burton Evans	The Preservation of Wood - A Self Study for Wood Treaters	7.00	Comm. Appl.
GA	Burton Evans	Commercial Training Manuals Wood, Microbial, Aquatic and Ornamental. Right of Way and Ag. Commodity Fumigation ready early 1989.	Negatives for sale few free copies	Comm. Appl.
IL	Philip Nixon	Training Manual for Field Crops	7.00	Comm. Appl.
IL	Philip Nixon	Training Manuals for Ornamentals, Seed Treatment and Rights of Way	5.00/ 2.00/ 5.00 resp.	Comm. Appl.
KS	Don Cress	Private Pesticide Applicator Manual	1 Free	Farmers
KS	Don Cress	19 Commercial Applicator Manuals (Write for order blank) Most newly revised	1.50- 7.00 title/copy	Comm. Appl.
MD	Amy Brown	Pesticide Applicator Training Series, Care, Ag-Pest, Ornamentals/Turf	---	Cert. Applr.

STATE	CONTACT	TITLE	COST	AUDIENCE
NC	John Wilson	Commercial Applicator Dealer, Orna/Turf, Regulatory	1 Free	Comm. Appl.
NC	John Wilson	Private Pesticide Applicator Recertification Manual	1 Free	Private Appl.
ND	Gregory Dahl	Private Applicator Certification	5.00	Priv. Appl.
ND	Gregory Dahl	N.D. Pesticide Certification Manual	5.00	Comm. Appl.
PA	Winand Hock	All Commercial Manuals - being revised - available late 1988	---	Comm. Appl.
PA	Cynthia Brown	Pesticide Education Manual (core)		Comm./ Priv. Appl.
WI	Roger Flashinski	Pest Management Principles - Wisc. Farmer, Row Crops	12.00	Farmers, others
WI	Roger Flashinski	Pest Management Principles - Field and Vegetable	20.00	Comm. Appl.
WI	Roger Flashinski	Pest Management Principles - Fruit Crops	20.00	Comm. Appl.
WI	Roger Flashinski	Pest Management Principles - Forest Crops	20.00	Comm. Appl.
WI	Roger Flashinski	Pest Management Principles - Ornamentals and Turf	20.00	Comm., Also Greenhouse
WI	Roger Flashinski	Pest Management Principles - Aquatic	20.00	Comm., Public Operators
WI	Roger Flashinski	Pest Management Principles - Right of Way	20.00	Comm. Appl.
WI	Roger Flashinski	Pest Management Principles - Structural	20.00	Comm. Appl.
WI	Roger Flashinski	Pest Management Principles - Fumigation	20.00	Comm. Appl.
WI	Roger Flashinski	Pest Management Principles - Wood Destroying Pests	20.00	Comm. Appl.
WI	Roger Flashinski	Pest Management Principles - Wood Preservation	20.00	Comm. Appl.

IV. FOLDERS, PAMPHLETS, BROCHURES

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STATE	CONTACT	TITLE	COST	AUDIENCE
CA	Patrick Marer	Write for lists of books, pamphlets, etc. on Pest Control - California	various prices	Comm. Appl. Pest Cont. Advisors
FL	Norman Nesheim	Homeowner's Guide to Pesticide Safety	1 Free	Homeowners
FL	Norman Nesheim	Safety with Pesticides in the Home Garden	1 Free	Homeowners
HI	Barry Brennan	14 Fact Sheets on Standards, Laws, Labels, Safety, Fumigation, etc.	1 Free	General
MA	Jeffrey Jenkins	Use of Pesticides in MA (revised 1989)	Free	General
MA	Jeffrey Jenkins	Insecticides and Miticides Registered for the Interior Planstcapes - 1988	Free	Cert. Int. Plantscapes
NE	Larry Schulze	Federal Registered Restricted Use Pesticides - July 1988	1 Free	All
NC	John Wilson	Disposal of Pesticides and Pesticide Containers (In NC)	Free	Comm.
NC	John Wilson	Using Pesticides Safely - A Guide for Homeowners	Free	Homeowners
NC	John Wilson	Anti-Pollution Devices for Pesticide Applications Through Irrigation Systems	Free	General
NC	John Wilson	N.C. Pesticide Storage Regulations	Free	General

V. FILMS

D.C.	Nat'l. Agr. Aviation Assoc.	The Food for Thought Catalog - Several films	Write NAAA 115-D Street SE Washington, DC 20003
PA	Winard Hock or WA State	Pollinator Protection 11 minutes	General

STATE	CONTACT	TITLE	COST	15 AUDIENCE
V1. OTHER MATERIALS				
CO	Burt Bohmont	Study Course - Pesticides: Why & How They Are Used 3.0 semester credits	126.00	General
CO	Burt Bohmont	Study Course - Pesticides: Why & How They Are Used 4.5 semester credits	90.00	General
FL	Norman Nesheim	Calibration: The tank Refill Method	Overhead Masters All Free to PC's	
FL	Norman Nesheim	Calibration: The 1/128th of an Acre Method	Overhead Masters All Free to PC's	
IL	Philip Nixon	Private Applicator Workbook	2.00	Farmer
IL	Philip Nixon	General Standards Workbook	2.00	Comm. Appl.
IL	Philip Nixon	Ornamentals/ Turf Workbook	2.00	Comm. Appl.
IL	Philip Nixon	Field Crops Workbook	2.00	Comm. Appl.
MA	Jeffrey Jenkins	Insecticides & Miticides Registered for Interior Plantscape in MA 1988	Free request	Cert. Int. on Plantscapes

For additional information on these and other pesticide training materials

CONTACT: JOHN H. WILSON (NCSU)

(919) 737-3113

END

SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS

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HERBICIDE RESEARCHER SOUGHT BY OSU

The Department of Forest Science at Oregon State University (OSU) has a two-year graduate research assistant's position available to study the environmental fate of herbicides. The position will be part of the Integrated Forest Protection (IFP) program at OSU and can lead to a Master's degree. IFP is designed to train foresters in integrated pest management techniques and fire suppression. Research will be conducted in the Pesticide Analytical Laboratory of the USDA Forest Service Pacific Northwest Research Station in Corvallis. The laboratory is involved in a range of projects studying the distribution and degradation of pesticide residues in forest environments. Prospective students should possess a strong natural resource background and an interest in gaining familiarity with the environmental fate of pesticides and other chemicals in forests. The annual stipend is \$8,190. Applications for the program can be obtained by writing to Dr. Logan A. Norris, Department of Forest Science, Oregon State University, Corvallis, OR 97331 or for further information

CONTACT: DR. KENNETH P. BENTSON
DR. LOGAN NORRIS

(503) 757-4333
(503) 737-2244

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090-6090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

PEST MANAGEMENT PLANNING COMMITTEES MEET

In efforts to coordinate research and development activities for forest pests, a number of steering committees, work groups, and ad hoc discussion groups have been formed to discuss the results of 1989 activities, identify needs for 1990, prioritize research and development needs, identify appropriate locations and personnel to do the testing, and estimate funding needs and sources. The following brief summaries indicate the pests of interest and progress to date.

Gypsy moth/Bacillus thuringiensis Meeting: On October 11-12 a gypsy moth (GM)/Bacillus thuringiensis (Bt) meeting was held in Middletown, Pa. The meeting was sponsored by an ad hoc committee of State and Federal government personnel and industry and user-community representatives. One purpose of the meeting was to review the past season's activities and identify needed laboratory and field research for the next season. For example, it was recommended that laboratory studies be pursued to: Evaluate new Bt formulations; determine effects of Bt, with and without stickers, on car paint finishes; determine Bt drying times and rain fastness; identify feeding stimulants/inhibitors; evaluate toxic dose(s) based on droplet density/size; establish protein toxicity levels; identify salt air/acid rain effects; and develop a standard GM/Bt bioassay.

In addition, field studies were recommended to: Evaluate undiluted Bt applications; compare the effectiveness of mist blower vs hydraulic sprayers for ground applications; compare 1 vs 2 applications of Bt based on egg mass densities; evaluate high dose Bt vs diflubenzuron; evaluate high dose Bt on building GM populations; field test new Mycogen products; evaluate new navigation systems; determine the effect of poor application on Bt efficacy; evaluate Bt residual effects; determine Bt effects on non-target organisms; and evaluate new, high potency Bt formulations.

Minutes of the GM/Bt meeting will be prepared and distributed in the near future. In the meantime, questions about the group's discussions may be directed to the Secretary

CONTACT: NORMAND DUBOIS

(203) 773-2027

Western Bark Beetle Work Group: The Western Bark Beetle Work Group met in Boise, Idaho October 16-19. The purpose of the meeting was to evaluate results from 1989, determine additional research needs for 1990, and identify followup action items. Specific discussions centered on methylcyclohexenone (MCH), the antiaggregating pheromone of the Douglas-fir and spruce beetle; verbenone, the antiaggregating pheromone of the mountain pine (MPB) and western pine beetles; MPB baits; and bark beetle preventive sprays. Strategies for the use of these materials were also discussed as were funding priorities. Dave Holland, Chairman of the Work Group, will prepare and distribute a complete set of notes from the meeting. In the meantime if there are questions

CONTACT: DAVE HOLLAND

(801) 625-5257

Steering Committee for Western Defoliators: The National Steering Committee for Aerial Application of Pesticides--Western Defoliators, met in Albuquerque, October 11-12 to review events since the 1988 meeting, and to identify testing and related needs. The Steering Committee is evolving from its initial role of evaluating pilot project testing needs to identifying needs and recommending laboratory, developmental, field testing, and pilot projects of

pesticides, equipment, and strategies. The committee prepared a listing of recommendations subdivided into six categories: Laboratory tests; field tests; cooperative field/pilot projects; equipment, models, and technology development; information management; and administration.

A full report of the committee is being prepared. It will list committee members, identify 1989 accomplishments, make recommendations for the six followup categories listed above, and summarize the purpose and continued need for the committee. To receive a copy of the minutes

CONTACT: JACK BARRY (916) 758-4600

In addition to these already-held meetings, three additional Steering Committees will hold sessions in the near future:

Gypsy Moth/Other Eastern Defoliators	November 1-2	Columbus, OH
Seed and Cone Insects	November 8-9	Salt Lake City, UT
Vegetation Management	March 7-8	Sacramento, CA

Additional information on these latter three can be obtained from the National Steering Committees Chairman

CONTACT: JACK BARRY (916) 758-4600

NEW BIOCONTROL VIDEOTAPE AVAILABLE

A videotape entitled "Biological Control--A Natural Alternative," was recently released by the USDA Animal and Plant Health Inspection Service (APHIS). The purpose of the videotape is to provide a greater understanding and appreciation of new and old pest control options that are environmentally safe.

More than 20,000 pest species, including insects, weeds, nematodes, bacteria, fungi, and viruses, cause annual losses in the U.S. of over \$12 billion. The sheer magnitude of the problem has forced growers to seek new ways to control pests, and biological control is one of them.

In 30 minutes, USDA's videotape gives an overview of biocontrol, including key examples of projects in which beneficial insects and other organisms are used to control pestiferous insects and weeds. People interested in the biological and environmental sciences will find the issues being treated germane to their interests. The videotape can be shown freely via local television outlets without copyright infringement.

A companion brochure, "Biological Control--Spreading the Benefits," is available free of charge in limited quantities from Printing and Distribution Management, USDA, APHIS, M&B, G-110 Federal Building, Hyattsville, MD 20782.

The videotape is for sale at the Customer Services Section, National Audiovisual Center, 8700 Edgeworth Drive, Capitol Heights, MD 20745.

For additional information

CONTACT: APHIS (VIDEOTAPE) (301) 763-1896
APHIS (BROCHURE) (301) 436-8413

CHESS ANYONE?

A Council for Health and Environmental Safety of Soils (CHESS) was recently created by the International Society for Regulatory Toxicology/Pharmacology.

Soil contamination has become a significant environmental and public health concern over the past decade. The range of contaminants in soil is now known to be very broad, and includes petroleum, heavy metals, dioxins, pesticides, organic solvents, and other harmful substances. The presence of such contaminants in soil is affecting the use of land throughout the United States.

Costs associated with soil cleanup activities have escalated enormously, often to the point of having a major impact on development. Along with the increased costs of cleanup is the growing concern that soil contamination may present significant health problems as a result of groundwater contamination, crop contamination, and localized air pollution.

Recent surveys have indicated important differences at the State and Federal level concerning how to deal with soil contamination. Inconsistencies in rulings between and within States have led to confusion in the private sector concerning what to expect from the regulatory agencies. Therefore, there is a crucial and immediate need for consensus risk assessment methodology for determining soil contamination. CHESS was formed to help play a significant leadership role in this area by creating a Council composed of recognized experts in the area of soil contamination and relevant disciplines.

The goal of CHESS is to provide leadership in soil contamination by:

- * Providing consensus guidelines on analytical techniques, risk assessment methodologies, and remediation of contaminated soils.
- * Conducting scientific evaluation, making analyses, and providing recommendations for a course of action.
- * Exchanging technical information.
- * Providing education and training functions.
- * Encouraging dialogue among affected groups.

To obtain more information about CHESS

CONTACT: DR. JOHN P. FRAWLEY (302) 594-7065

AMERICAN CHESTNUTS MAY MAKE A COMEBACK

Thanks to research on the American chestnut (*Castanea dentata*) a new biological control for the Chestnut blight, the fungus that devastated the stately trees decades ago, has recently been identified. The new treatment involves injecting trees with a mixture of non-lethal blight strains.

In a related effort to save the chestnut, the American Chestnut Council is promoting the establishment of new groves to maintain the species. For information about tree and seedling sales write: Wexford County Soil and Water Conservation District, 3060 W. 13th St., Cadillac, MI 49601.

For further information about chestnut blight

CONTACT: SANDRA L. ANAGNOSTAKIS (203) 789-7253

HOT SAUCE ANIMAL REPELLENT FINDS NEW USE

Hot peppers may make your mouth burn, but in a concentrated form their extract has the opposite effect on burning skin resulting from virus-caused shingles. Galen-Pharma, Inc., of Northbrook, Ill., will soon begin marketing the hot pepper extract, known as capsaicin, in a cream called Axsain. The company uses as much as 1,000 pounds of peppers to obtain an ounce of capsaicin powder.

Several research institutions nationwide have studied the safety and efficacy of capsaicin, which long has been used as a folk treatment for pain in Europe and as an animal repellent (EPA Registration No. 72-574) in the U.S. A recent study at the University of Texas, Health Science Center in San Antonio showed that in a double blind study of 40 patients with shingles-related pain, 69 percent who were treated with capsaicin showed improvement. Preliminary data also indicate that the cream relieves similar burning pain in some patients with diabetic neuropathy.

Capsaicin relieves burning pain because it affects certain types of nerve fibers. According to one researcher, it thwarts a natural body chemical known as Substance "P" that the body uses to send certain pain messages to the brain. When capsaicin is applied, it stops Substance "P" from sending impulses.

According to Galen-Pharma, Axsain will be distributed nationwide by November. It will be available over the counter. For followup

CONTACT: JOAN HOFFMAN (U. TEX)

(512) 567-4524

STUDY CALLS FOR INCREASED RESEARCH ON BIOLOGICAL PEST CONTROL

Theodore L. Hullar, chancellor of the University of California, Davis, and chairperson of a National Academy of Sciences and the National Academy of Engineering study group recently called for a fundamental reorientation of agricultural research. Quoting from a Sacramento Bee editorial Hullar points out that:

"The research community needs to expand its base beyond the land grant colleges and research units of the U.S. Department of Agriculture that have traditionally dominated the program. As an earlier academy study revealed with respect to agribusiness' reliance on chemical pesticides, those traditional elements of the research establishment, rather than fostering innovation, have often acted as impediments to it. Hullar wants to bring to bear much more of the expertise in the private colleges and universities and other institutions.

In addition, the national academies' report points out that the focus of agricultural research needs to be shifted. The problem isn't increasing productivity anymore. The issues that American agriculture should be addressing for the future involve reducing the costs of production and mitigating the environmental damage that is all too often a by-product of modern industrial farming. Specifically Hullar calls for increased research into biological pest controls, the effects of pesticide residues on food and more effective control of the pollutants in agricultural wastewater."

CONTACT: JACK BARRY

(916) 758-4600

FSCBG SPRAY MODEL UPDATES

Cranfield: Staff and students at Cranfield Institute of Technology, Cranfield, England, showed keen interest in the Forest Service Cramer, Barry, Grimm (FSCBG) pesticide application model which was recently demonstrated by Pat Skyler at the Institute during an aerial application shortcourse. As a result of Ms. Skyler's efforts, this technology is now available to Cranfield and they plan to use it in future training sessions.

Data General: FSCBG aerial spray model, Version 3.04, was installed on the Data General by Milt Teske, Continuum Dynamics, Inc. (CDI) on October 6, 1989. This is one of several tasks to be accomplished under a contract with CDI to enhance FSCBG. Installing the code on the DG will eventually make the model available to all FS employees; however, users should take FSCBG workshop training before attempting to run the model.

Training Opportunities: A reminder that FPM in cooperation with Oregon State University and Continuum Dynamics, Inc. has scheduled four FSCBG "hands-on" workshops. The schedule is:

November 13-17, 1989	Corvallis, OR
December 4-8, 1989	Corvallis, OR
January 8-12, 1990	Clemson, SC
February 5-9, 1990	Clemson, SC

CONTACT: PAT SKYLER (916) 758-4600

NATIONAL ADVANCED PESTICIDE MANAGEMENT TRAINING

The next national pesticide course will be held at Marana, AZ, February 19 - March 1, 1991. The steering committee has completely restructured the course to address student and faculty critiques. Moderators for the various course units have been selected and components to be covered in each unit identified. The next course will emphasize hands-on activities both in the classroom and field. Julie Weatherby will be assisting Jack Barry in coordination.

CONTACT: JACK BARRY (916) 758-4600

NATIONAL ADVISORY COMMITTEE FOR AERIAL APPLICATION MODELS

At a recent USDA Forest Service (FS)-sponsored meeting of persons interested in the agency's aerial application models, it was suggested that a national aerial application model committee be established. Jack Barry has drafted a charter for the committee that includes purpose, scope, sponsorship, membership, and responsibilities. The purpose of the committee will be to provide recommendations to the systems' managers to further the evaluation, enhancement, and technology transfer of the aerial application models. The proposed committee would be supplemental to the application model system managers and the user groups. The system manager (one for each of the two models) is the focal point for all actions involving changes to the model. The user group (one for each model) is the focal point for communicating to model users. The user groups communicate and the system managers manage. Questions should be directed to:

CONTACT: JACK BARRY (916) 758-4600

PESTICIDE-RELATED WORK ORDERS SIGNED

The Washington Office (WO) recently signed work orders with two contractors to provide needed pesticide-use information:

Herbicide Fact Sheets: In cooperation with Region 6, the WO has requested that Oregon State University prepare 13 herbicide Fact Sheets. The Fact Sheets will be used with various publics and will be in compliance with vegetation management mediated agreement in R-6. Each Fact Sheet will identify the active ingredient, chemical name, representative trade name(s), describe forestry applications, discuss environmental fate and human health effects, and provide a short list of references. The initial set of 3-5 page Fact Sheets will cover the following herbicides:

Asulam	2,4-D	Atrazine
Bromacil	2,4-DP	Dalapon
Dicamba	Glyphosate	Hexazinone
Picloram	Simazine	Tebuthiuron
Triclopyr		

The contract for this effort runs for 12 weeks, therefore, copies should be available at the beginning of 1990 and their availability will be announced in a future issues of "Short Subjects..." Satisfactory completion of these herbicide Fact Sheets may lead to the development of additional Fact Sheets for other pesticides commonly used in forestry.

DDVP Background Statement: Because of recent concerns about the insecticide DDVP (dichlorvos, Vapona or Vaponite), the WO has requested that Labat Anderson, Inc. prepare a Background Statement for use by field units using or contemplating the use of this active ingredient. DDVP is currently used in gypsy moth monitoring traps and as a housekeeping-type pesticide; however, EPA has raised concerns about its possible carcinogenicity. Therefore, the FS wants to be able to provide up-to-date information to the public and our employees. The completed Background Statement should be available in early 1990.

For additional information on either of these work orders

CONTACT: LARRY GROSS (703) 235-8209

SPRAY CHARACTERIZATION TRIALS PLANNED

R-6 in cooperation with Abbott Laboratories is planning airport trials to check handling, atomization, spray deposition, and swath widths of small helicopters and mono-wing turbine aircraft. The trials of Dipel 6AF are tentatively scheduled to be conducted in northern California the end of November or early December. R-4 is conducting similar trails of Foray 48B this week in Utah.

For information on the results of either of these spray trials

CONTACT: JAMES HADFIELD (R-6) (503) 326-2727
DAVE HOLLAND (R-4) (801) 625-5257

PESTICIDE CANCELLATIONS

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended in 1988, requires for the first time that all pesticide registrants pay an annual registration maintenance fee, due by March 1 of each year, to keep registrations in effect. This requirement applies to all registrations without exception--those granted under FIFRA Section 24(c) to meet Special Local Needs as well as regular registrations granted under FIFRA Section 3. There are no statutory exceptions to the requirement, and registrations for which the fee is not paid are subject to cancellation, by order and without a hearing.

To date, maintenance fees have been paid for some 22,139 Section 3 registrations or about 63 percent of the registrations on file with EPA. Fees have been paid for an additional 3,067 Section 24(c) registrations, or about 35 percent of the total on file. Cancellations for non-payment of maintenance fees affect about 13,400 Section 3 and about 5,900 Section 24(c) registrations. Because of the unprecedented magnitude of these cancellations, EPA has deferred actual cancellations to permit careful assessment of the impacts of the potential loss of these registrations. They are particularly concerned about the potential impact on minor uses of pesticides.

The Forest Service paid the registration maintenance fees for the nucleopolyhedrosis viruses of the Douglas-fir tussock moth, the gypsy moth, and the pine sawfly (See "Short Subjects..." Issue No. 89-3, February 16, 1989) for which the agency is the registrant.

Field units having Section 24(c) registrations that they would like to maintain should work directly with the registrants to persuade them to continue to support the ingredient, or to identify third parties who would be willing to support the registrations if there were a transfer of the data package at EPA.

For followup on the cancellation of pesticide registrations due to failure to provide maintenance fees

CONTACT:JOHN M. CARLEY (EPA)	(703) 557-2315
DENNIS R. HAMEL (FS)	(703) 235-8209

PRESIDENT PROPOSES PESTICIDE LAW CHANGES

President Bush proposed new legislation on October 26 that would overhaul the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The President's intent is to modify FIFRA so that the removal of dangerous chemicals from the food supply can be expedited. He also supports the setting of new standards for assessing cancer-causing risks.

The White House plan, if approved by Congress, would make it easier for the Environmental Protection Agency to suspend dangerous chemicals, and would streamline procedures needed to remove a chemical from the market. Both members of Congress and environmental groups charged that the administration's proposed changes would weaken food safety and strip power from States that choose to set stricter safety standards than the Federal government since the proposal calls for Federal preemption of pesticide tolerances. This preemption would mean that States could not enact more stringent pesticide laws.

Additional information will be provided as the President's proposal moves through the bureaucratic process of making changes to FIFRA.

END

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3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

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MESSAGE DISPLAY

TO S.ROOT:R1

From: THOMAS V DVORAK:R01F02A
Postmark: Oct 27,89 8:14 AM

Subject: Forwarded: ANNUAL UPDATE - CABIN & LOOKOUT DIRECTORY

Comments:

From THOMAS V DVORAK:R01F02A:
HERE'S 3 OF 4. I THOUGHT I'D BE HEARING FROM ANOTHER DISTRICT,
BUT I DON'T THINK SO. SOOOO THIS IS THE LAST ONE.

Message:

From BARBARA CLEMANS:R01F02D03A:
THERE WILL BE NO CHANGES TO DIRECTORY FOR 1990. OTHER INFO FOLLOWS:
A. NAME OF RECREATION LODGING - HOGAN CABIN
B. NUMBER OF PERMITS ISSUED - 57
C. RECEIPTS COLLECTED - \$1000.00
D. NUMBER OF NIGHTS PERMITTED (FOR USE BY PUBLIC) - 130
E. TOTAL NUMBER OF PERSONS SERVED - 210
ANY QUESTIONS, PLEASE CALL OR IF SOMEONE ELSE WAS TO GET THIS. BARB

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SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS

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SEVERAL NEW PESTICIDE FACT SHEETS AVAILABLE

The U.S. Environmental Protection Agency (EPA) recently released new Pesticide Fact Sheets for sulfluramid, triadimenol, and Trichoderma harzianum and T. polysporum.

Sulfluramid: A new insecticide designed to control roaches and ants, including fire ants (See "Short Subjects and Timely Tips...Issue No. 89-9, p. 8). EPA registrations for products containing sulfluramid are 1812-329 and 1812-330.

Triadimenol: A seed protectant fungicide for control of soil-borne diseases. Primarily for agronomic seed protection but may have potential for conifer seed protection in the future.

Trichoderma harzianum and T. polysporum: A new bio-fungicide for protection of wood products from decay (See item on p. 5).

For copies of these Pesticide Fact Sheets

CONTACT: DENNIS R. HAMEL

(703) 235-8209

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090-6090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

JOB ANNOUNCEMENTS

PEST MANAGEMENT POSITIONS AVAILABLE

Forest Pest Management (FPM) in the Washington Office (WO) recently announced plans to fill two positions.

Pesticide Specialist (GM 13/14): An interdisciplinary position in which the incumbent will serve as national technical authority on pesticide-use management and coordination (PUM&C). Responsibilities will include: Development of PUM&C policy and direction; pesticide-use activity oversight; and appeals coordination. Persons interested in applying should respond to announcement number WO-002-90 with all appropriate information by November 1. Submit applications to USDA-Forest Service, P.O. Box 96090, Washington, DC 20090-6090.

Program Analyst (GS 9/11): Incumbent to this position will serve as program analyst and office manager for the FPM staff. Primary responsibilities will include providing analytical and management skills in support of the FPM program. Knowledge, skills, and abilities should include: Effective communication, program analysis, information management, supervision, and coordination. Persons interested in applying should respond to announcement number WO-262-89U, USDA Forest Service, P.O. Box 96090, Washington, DC 20090-6090 by October 24.

For additional information about either of these positions

CONTACT: JIM SPACE (703) 235-1560

ENTOMOLOGIST NEEDED IN REGION 6

The Pacific Northwest Region (R-6) is advertising for an entomologist (GS 9/11) to serve on their staff in Portland, Oregon. The incumbent will conduct ground surveys and biological evaluations of forest insects. Incumbent will also conduct aerial detection surveys and pest prevention and suppression. The best qualified applicant will be selected based on: Ability to communicate orally and in writing; entomological and natural resource management knowledge; and data management and statistical skills. Applications for this position are due in R-6 October 11

CONTACT: JORY JENSEN (PERSONNEL) (503) 326-6830
BILL CIESLA (FPM) (503) 326-2727

OSU SEEKS CHEMIST/TOXICOLOGIST

The Department of Agricultural Chemistry, Oregon State University, Corvallis, Oregon, is seeking a chemist with experience in chemistry, toxicology, and environmental behavior of pesticides. A significant part of the work in the position will require a general knowledge of pesticide technology (application and formulation), residue studies, and assistance with minor-use registrations (e.g., forestry). Candidates should have a general knowledge of pest control practices. Experience in exposure assessment and environmental toxicology will be deemed highly desirable. Candidates should also have a problem-solving mentality and the teaching skills to bring these subjects understandably to all segments of the community.

For a copy of the announcement for this position, which closes October 31,

CONTACT: DR. FRANK DOST (503) 737-3791

GOOD LABORATORY PRACTICES RULE ABOUT TO TAKE EFFECT

The U.S. Environmental Protection Agency (EPA) filed a **Final Rule** requiring compliance with Good Laboratory Practice (GLP) standards in the August 17 issue of the **Federal Register** (Vol. 54, No. 158, pp. 34052-34074). The purpose of the **Final Rule**, which takes effect October 16, is to set standards for testing conducted in support of pesticide registration and reregistration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, and the Toxic Substances Control Act (TSCA). The **Rule** sets standards for testing conducted in the field and for such disciplines as ecological effects, chemical fate, and residue chemistry. The FIFRA GLP standards specify minimum practices and procedures that must be followed in order to ensure the quality and integrity of data submitted to EPA in support of pesticide product registration/reregistration.

Forest Service research units, their contractors and cooperators, and others conducting research (e.g., NAPIAP) in support of pesticide registrations are required to comply with the **Final Rule**, which will be incorporated later into the FS directives system (e.g., FSM/FSH 4500). For additional information

CONTACT: ZDENKA HORAKOVA (NAPIAP)	(703) 235-8209
ROBERT LYON (FIDR)	(703) 235-8206
DENNIS R. HAMEL	(703) 235-8209

NEW TECHNOLOGY TRANSFER AGREEMENT SIGNED

A new, 20-year, technology transfer (TT) agreement designed to speed the research, development, and marketing of the Douglas-fir tussock moth (DFTM) pheromone has been signed by the Forest Service and Scentry, Inc., of Buckeye, Arizona. The purpose of the TT agreement is for the FS and Scentry to pool resources to commercially produce and distribute a hollow-fiber formulation of DFTM pheromone (Z-6-heneicosen-11-one) known as NoMate DFTM.

NoMate DFTM is currently being used under an experimental-use permit (No. 42627-EUP-3); however, it is hoped that as a result of the new TT agreement Scentry, Inc. will pursue full registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended.

For additional information about the TT agreement or Scentry plans

CONTACT: CHARLES DOANE (SCENTRY)	(602) 233-1772
LONNE SOWER (FS, PNW)	(503) 757-4373

AGRICULTURE AND FORESTRY AVIATION CONFERENCE RESCHEDULED

The Agriculture and Forestry Aviation Conference originally scheduled for October 2-6, 1989 (See "Short Subjects...Issue Nos. 89-1, 3, and 5) has been rescheduled for October 8-12, 1990 in Winnipeg, Manitoba, Canada. The purpose of the conference will be to discuss "Industries' Future Needs" for agricultural aviation. There will be three concurrent workshops on aerial photography and remote sensing, fire management, and aerial distribution. Poster sessions and a trade show will also be featured. For registration information

CONTACT: ACAFA '90
300-530 KENASTON BLVD.
WINNIPEG, MANITOBA, CANADA, R3N 1Z4

MINOR-USE PESTICIDE REREGISTRATION SYMPOSIUM

The National Agricultural Chemicals Association (NACA) and the U.S. Environmental Protection Agency (EPA) are sponsoring a symposium October 18 on "Minor-Use Pesticide Reregistrations." This symposium will explore and explain the policies, procedures, and possibilities for maintaining pesticide registrations for minor crops (e.g., forestry). Discussion topics at the symposium will include:

Reregistration efforts and related activities of EPA, IR-4, USDA, NACA, and third parties.

EPA policy and regulations on reregistration requirements for minor uses.

Data development to support reregistration for minor crop uses.

Data waivers for pesticide uses with low sales volume.

Basic pesticide registration procedures.

Residue and product performance field trials, including requirements of "Good Laboratory Practices."

Sources of information on alternative pest control strategies.

Suggestions for amendments to regulations affecting minor-use registrations.

For registration information

CONTACT: PAM CHASE (NACA)

(202) 296-1585

U.S. FOOD SUPPLY "SAFE" FROM PESTICIDE USE, SAYS FDA

The U.S. food supply continues to contain "safe" levels of pesticides, the Food and Drug Administration (FDA) says in its latest (1988) survey. FDA said in its second annual report that it found no pesticide residues in more than 61% of the samples taken compared with 56% in 1987.

FDA said that 5.6% of the 9,080 vegetables sampled violated residue standards. Violation rates for the other food categories were: 2.5% of the grains/grain products; 2.0% of the 1,030 miscellaneous samples; 1.9% of the 5,256 fruit samples; 1.8% of 878 fish/seafood/other meats samples; and 0.9% of the 1,222 samples of milk/dairy products/eggs. Less than 1% of domestic samples violated residue tolerances.

FDA said in the report that 256 pesticides were detectable by the methods used in the monitoring. Of these, 118 were found. This is at a level similar to the first (1987) report on the U.S. food supply.

The study used 18,114 food samples--7,639 domestic and 10,475 imported--which represented a 17% and 31% increase, respectively, in samples over 1987.

CONTACT: B. MCMAHON (FDA)

(202) 245-1152

BIORATIONAL FUNGICIDE APPROVED BY EPA

An application for registration of a biorational fungicide developed by Binab, USA, Inc. was submitted recently and acted upon favorably by EPA. Binab T Pellets Biorational Fungicide (EPA No. 61463-1) and Binab T Wetttable Powder Biorational Fungicide (EPA No. 61463-2) both contain the biological ingredients Trichoderma harzianum and T. polysporum. These products are for use on wooden utility poles, playground structures, and fence posts to control internal decay.

For additional information

CONTACT: SUSAN LEWIS (EPA)

(703) 557-1900

NRC STUDY ENCOURAGES ALTERNATIVES TO PESTICIDES

In spite of increased concern over groundwater contamination from pesticides and pollutants found in agricultural runoff, the Department of Agriculture, through a myriad of policies, continues to discourage more environmentally sensitive farming practices, says the National Research Council, the investigative arm of the National Academy of Sciences. Alternative farming systems not used include biological pest control, crop diversification, and options that "emphasize management and take advantage of biological relationships that occur naturally."

"Many Federal policies discourage adoption of alternative practices and systems by economically penalizing those who adopt (crop) rotations, apply certain soil conservation practices or attempt to reduce pesticide applications. Federal programs often tolerate and sometimes encourage unrealistically high yield goals, inefficient fertilizer and pesticide use and unsustainable use of land and water," says a council committee in "Alternative Agriculture," a 448-page book that looks at the viability of alternative agriculture techniques.

The committee urges Congress to restructure Federal price support programs to remove disincentives that inhibit farmers from adopting alternative systems where feasible.

CONTACT: NATIONAL ACADEMY PRESS

1-800-624-6242

ITEMS OF INTEREST REQUESTED

Anyone with pesticide-related information is encouraged to provide input to "Short Subjects and Timely Tips for Pesticide Users." Summarize your research, highlight suppression efforts, relate integrated pest management successes, or identify items of general interest to other pesticide users.

This newsletter has become a valuable source of information for a wide variety of readers, but input is needed for continued success.

CONTACT: DENNIS R. HAMEL
SSTT EDITOR

(703) 235-8209
DG:D.HAMEL:W01A

END

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PESTICIDE WORKSHOP BEING PLANNED

The Forest Service's biennial pesticide-use management and coordination (PUM&C) workshop is being planned for January 29, 1989 to February 2, 1990. This workshop will cover current and upcoming pesticide-related issues (e.g., PUM&C Handbook, FSH 2109.11; minor-use registrations, endangered species protection, biotechnology, NEPA documentation, appeals, pesticide background statements, pesticide fact sheets, semiochemicals, and certification and training).

Region 8 is coordinating the local arrangements for the workshop and a call letter will be forwarded with reservation information as soon as it is available. The Washington Office (WO) is planning the agenda. Items of discussion that you would like to see addressed at the workshop should be brought to the attention of the WO

CONTACT:

MAX OLLIEU

(730) 235-1560

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AGENCY NEPA POLICY REVISED

The Forest Service, in an August 21 **Federal Register** Notice (FR Vol. 54, No. 16, pp. 54533-5), announced several changes to its directives (FSM 1950) for compliance with the National Environmental Policy Act (NEPA). The new direction has to do with categorically excluding certain proposed actions from documentation in an environmental assessment (EA) or an environmental impact statement (EIS). The direction allows for documentation of certain decisions via Decision Memos. For example, the following categories of routine administrative and maintenance actions normally do not individually or cumulatively have a significant effect on the quality of the human environment. Therefore, they may be categorically excluded from documentation in an EIS or an EA.

1. Administrative actions, such as road closures; restrictions on travel or use, such as camping, boating, or hunting; and posting signs and markers.
2. Construction of low-impact facilities or improvements, such as auxiliary support buildings or other structures; picnic areas and campgrounds; temporary and other low-standard roads, and trails.
3. Repair and maintenance activities, such as on buildings, grounds, trails, rights-of-way, and range improvements.

For other activities, categorical exclusion may also be appropriate but a project file and Decision Memo are required. For example, maintain a project file/Decision Memo for the following categories of proposed actions:

1. Low-impact silvicultural activities that are limited in size and duration and that primarily use existing roads and facilities, such as firewood and miscellaneous forest project sales; salvage, thinning, and small harvest cuts of less than 100,000 board feet or less than 10 acres; site preparation; and planting and seeding.
2. Low-impact range management activities, such as fencing, seeding, and installing water facilities.
3. Issuance or modification of authorizations or agreements for such uses of lands or facilities as road maintenance and additional use of existing roads, rights-of-way, and easements.
4. Low-impact pest management activities, such as suppressing nuisance insects and poisonous plants in campgrounds and picnic areas; controlling cone and seed insects in seed orchards; and fumigating to control nursery weeds.
5. Mineral and energy activities of limited size, duration, and degree of disturbance, such as preliminary exploration and removal of small samples.
6. Fish and wildlife management activities, such as improving habitat, installing fish ladders, and stocking native or established species.
7. Transfer of interests in land, such as sales, exchanges, or interchanges pursuant to the Small Tracts Act; purchases and gifts; and small transfers and trades with other Federal agencies.

For additional details on how to file a Decision Memo or what to include in a project file, refer to FSM 1950 or

CONTACT:

MIKEL SHILLING

(202) 447-4708

MEDICAL TECHNOLOGY AND ENTOMOLOGY

According to a recent report in Insight magazine (September 25), "some insects are able to survive the effects of pesticides because of a special chemistry built into their exoskeletons," says a team of researchers. Using nuclear magnetic resonance imaging, a state-of-the-art technology more commonly used in medicine, they have discovered that this chemical linkage is not easily broken down and have determined where and how the tough chemical bonds are formed.

In the outer shell, or cuticle of insects the researchers have identified a site of the chemical bonding of various proteins, amino acids, carbohydrates and a polysaccharide chemical called catechol that is similar to dopamine in humans. This cross-linking process is the basis for the formation of insect exoskeletons.

There are commercially available compounds that interrupt insects cuticular chemistry, say the researchers, but this novel use of the imaging technique should give scientists a clearer idea of how to prevent formation of insects exoskeletons.

Eventually, researchers may be able to develop an inhibitor that would act as a biochemical pesticide, to essentially turn the insects' own bodies against themselves.

PESTICIDE PRICES UP THIS YEAR

Prices that farmers and others paid for pesticides rose in 1989, according to the Department of Agriculture. Herbicide prices increased an average of 5.5% and insecticide prices increased an average of 2.9% from 1988 levels. Leading the rise for herbicides was atrazine, used on corn and grain sorghum, up 18%. Methyl parathion led the increase for insecticides with a 31% increase over last year. Methyl parathion is used against boll weevil. The Agriculture Department also is projecting that use of pesticides on major field crops will grow about 5.5% this year to 463 million pounds of active ingredient. Herbicide use will be up almost 6% to 394 million pounds, insecticide use will rise 2% to 61 million pounds, and fungicide consumption will increase almost 3% to nearly 8 million pounds.

WORLD CONFERENCE ON PESTICIDES TO BE HELD

The "Third World Conference on Environmental and Health Hazards of Pesticides" as planned to be held in Cairo, Egypt December 11-15, 1989. The conference is being organized by the Faculty of Medicine (Cairo University) and the Egyptian Society of Pesticide Hazards, co-sponsored by the International Development Research Centre (IDRC-Canada), with collaboration by other international organizations. Sessions on pesticide formulations and residues; safety assessment of pesticide hazards; environmental health and education programs; management of pesticides; and natural products and prototypes will be of particular interest. Although time is short, (applications due end of September) persons wishing to attend this conference should obtain local approval and then

CONTACT: Professor Mahmoud M. Amr, President
 Egyptian Society of Pesticide Hazards
 Kasr El Aini
 Cairo, Egypt

JOINT PEST CONFERENCES HELD

From September 11-15 more than 300 entomologists, pathologists, foresters, silviculturists and others attended the joint meeting of the Western International Forest Disease Work Conference (WIFDWC) and the Western Forest Insect Work Conference (WFIWC) at the Inn of the Seventh Mountain in Bend, Or.

Concurrent workshops, field trips, special sessions, and informal discussion groups all contributed to a very successful conference, the first joint session held in 14 years. Of particular interest to pesticide users were sessions on:

- Advances in biological control of forest pests
- Bark beetle pheromones/semiochemicals
- Chloropicrin and laminated root rot
- Biotechnology in forest insect and disease research
- Current Status of B.t. Products
- Research Priorities for the 90's

In addition to the WIFDWC/WFIWC joint session, the North American Forestry Commission, Insect and Disease Study Group also met in Bend to discuss pest conditions, pesticide use, and quarantines in Mexico, Canada, and the U.S.

Proceedings of the WIFDWC/WFIWC sessions will be prepared/obtained later

CONTACT: Russ Mitchell (WIFDWC/WFIWC) FTS 422-6424

EXTENSION SERVICE RELEASES PESTICIDES HANDBOOK

Assistant Secretary of Agriculture for Science and Education, Charles E. Hess, announced on September 8 that a new publication has been completed by the Extension Toxicology Network (EXTOXNET). The publication is a compendium of fact sheets written to provide pesticide users with a single source of basic information on the 100 most commonly used pesticides in the United States.

"EXTOXNET was designed to enable farmers and homeowners who use pesticides to have access to information on them readily available in one place," Hess said. Reference copies of EXTOXNET will be available at every land grant university by October 1, and at offices of county extension agents at a later date as copies become available.

Hess said this type of material has not been available before in a format as convenient and easy to understand.

EXTOXNET was prepared by Cooperative Extension Service offices of Cornell University, the University of California, Michigan State University, and Oregon State University. Funding for the project was provided by these four universities, the Environmental Protection Agency, and the U.S. Department of Agriculture's Extension Service.

The looseleaf publication is divided into two sections of fact sheets: Pesticide Information Profiles, which focus on the health and environmental effects of specific pesticides, and Toxicology Information Briefs, which describe issues related to pesticides such as carcinogenicity, ecological effects, and epidemiology. The looseleaf format will make the publication easy to update, Hess said.

For information on purchasing copies of EXTOXNET

CONTACT: CAROL DOOLITTLE (607) 255-7660

DIFLUBENZURON DATABASE

The Appalachian Integrated Pest Management (AIPM) Field Office in Elkins, West Virginia is in the process of establishing a library of information concerning diflubenzuron (Dimilin). The library will contain an extensive listing of literature on diflubenzuron as well as copies of scientific studies, research data, and fact sheets. The listings will be made available by means of an information retrieval system. Attempts are being made to put the information on the Forest Service Data General Computer System to facilitate effortless dissemination. The project will be completed and the library ready for use around the middle of September. Although the listing will be updated, some of the more obscure documents may prove to be too elusive to have copies on hand. Therefore, to make the holdings of the library more complete, any contribution in the form of a bibliography or copies of documents you believe may have been missed would be greatly appreciated.

CONTACT: KARL A. HILBERT (304) 636-3803

FORESTERS WIN ONE AT EPA

Based on comments received from the USDA Forest Service, the Pennsylvania Department of Environmental Resources, and Abbott Laboratories, EPA has modified its position on the environmental hazard statement for Bacillus thuringiensis (B.t.) products registered for use in forestry.

EPA had originally suggested in the B.t. reregistration standard that future B.t. product labels would have to include the statement:

"Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Aerial applications over such sites is permissible only when they are not visible from above the tree canopy. Do not contaminate water by disposing of equipment washwaters."

The Forest Service and others found this language unnecessarily restrictive since B.t. is registered for hardwood forest defoliators such as tent caterpillars, gypsy moth, browntail moth, cankerworms, California oakworm, and other tree pests. In some cases these pests are in need of control in early spring before there is a fully formed "tree canopy." In other cases excessive defoliation by the pests results in little or no "tree canopy," therefore, we recommended changes that EPA accepted. The new B.t. label statement reads:

"Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Aerial application over such sites is permissible only over the forest canopy. Do not contaminate water when disposing of equipment washwaters."

Any questions on this subject may be directed to EPA.

CONTACT: PHIL HUTTON (703) 557-2690
 MIKE MENDELSON (703) 557-4409

2,4-D CARCINOGENICITY DATA TO BE EVALUATED AT HARVARD SYMPOSIUM

A symposium supported by the Industry Task Force II on 2,4-D Research Data, on 2,4-D toxicologic and epidemiologic oncogenicity data will take place in October at Harvard University. The purpose of the symposium of experts is to give an opinion on the weight of evidence of carcinogenicity of the pesticide. The symposium will arrive at an opinion without the National Cancer Institute's Nebraska and Iowa/Minnesota studies due in December 1989 and March 1990, respectively. EPA plans to have an outside panel of experts review all 2,4-D data after the new studies are filed.

According to the minutes of an August meeting on the symposium, "There is a possibility that without detailed information on the new NCI studies, the Harvard Symposium may not result in closure or a definitive conclusion, but the task force is interested in getting an idea of which way the data leans, so it can advise user groups and initiate research toward risk reduction as appropriate.

Experts who have accepted invitations to participate in the symposium of the School of Public Health, Harvard University include: Michel A. Ibrahim, Dean, School of Public Health, University of North Carolina; Ian C. Munro, Canadian Centre for Toxicology; James Swenberg, member of the FIFRA Scientific Advisory Panel; Gregory Bond, Dow Chemical Company, and Shiela H. Zahm, National Cancer Institute.

For followup information:

CONTACT: DONALD L. PAGE (HARVARD) (617) 732-1000

VIDEO EXAMINES ENEMIES OF FOREST PESTS

The value of research is sometimes lost because managers do not have access to new information. To solve this problem in the area of forest pests and their natural enemies, district wildlife personnel on the Wallowa-Whitman National Forest and a scientist from the Pacific Northwest Station worked together to develop a video that informs managers about research on the role of diseases, parasites, and predators in populations of forest pests.

Dan White, audio-visual production specialist, now on the Mt. Hood National Forest; Ralph Anderson biological technician, and Torgy Torgersen, principal entomologist, produced a 23-minute video entitled "**Natural Enemies of Forest Insect Pests**," to report research results. The video demonstrates beneficial effects of parasites and predators on major forest insect pests in the West. It describes dramatic effects of parasites, insectivorous birds, and foliage-foraging ants on survival of western spruce budworm, larch casebearer, and Douglas-fir tussock moth. One creative study approach was to put exclosures around 30-foot-tall trees to keep predators away from tree pests. With ants and birds excluded from the trees, there were ten times as many pests!

The video focuses on specific management practices that encourage beneficial enemies of forest insect pests. Not surprisingly, many of these recommendations lead to greater habitat diversity. Some concepts are new additions to the forest manager's "bag of tricks"

Copies of this videotape are available for loan or purchase

CONTACT: CINDY MINER (503) 326-7135

END

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"CONTROLLING PESTS..." PUBLICATION REVISED

The Forest Service publication entitled "Controlling Pests: When, Where, and How the USDA Forest Service Uses Pesticides," (FS-406) has been revised and is currently being distributed. The revision updates pesticide-use information and provides 5- and 10-year agency use patterns. The tri-fold publication also includes a message from the Chief, discussions of specific pesticide-use situations, identification of key issues, and summaries of pesticide use from 1984-1988.

The publication is being distributed as a Pesticide-Use Advisory Memorandum (No. 445), to Senators and Congressmen interested in Forest Service programs, State Foresters, Regional Public Affairs offices, and other interested persons

Additional copies are available from Forest Pest Management in the Washington Office (P.O. Box 96090 (204 RPD), Washington, DC, 20250) or

CONTACT: DENNIS R. HAMEL

(703) 235-8209

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FLORIDA ENDANGERED SPECIES PROTECTION PLAN

In the Fish and Wildlife Service's June Endangered Species Technical Bulletin (Vol. XIV, No. 6), they report on one of the latest State programs (Florida) to be developed in response to the EPA Endangered Species Protection Program.

The EPA has developed a national protection program to evaluate and, where necessary, control the impact of pesticides on endangered species. The EPA, Fish and Wildlife Service (FWS), and USDA have been working together to propose changes in the regulation of pesticide use. The geographic areas most likely to see these changes are those with high numbers of aquatic endangered species and large areas of agricultural production, such as Florida. Part of EPA's protection program is to allow States to develop their own programs. A State program offering equal or greater protection will supersede the Federal program when approved by both the FWS and EPA. Florida is one State electing this option.

Florida's rapidly expanding human population is causing agriculture and wildlife to compete for a shrinking landbase. Because most endangered plants and animals do not exist in direct association with agriculture, the potential for conflict usually occurs when pesticides contaminate a downstream water supply or the species inadvertently comes into contact with a poisoned animal.

Florida's proposed plan resembles the national program in that it intends to use maps and bulletins to identify restricted-use areas; however, Florida is including several unique features. For example, for species with highly restricted ranges, such as some endemic plants, the State proposes a "landowner contact program." This would involve negotiating agreements with landowners who have endangered species on or adjacent to their property. These agreements would give protection to the species by better managing certain types of pesticide use and by establishing monitoring programs. In such cases, developing agreements with individual landowners instead of establishing rangewide restrictions keeps the disclosure of endangered species sites to a minimum, thereby preventing potential vandalism and/or illegal collecting.

Another unique aspect of Florida's proposed program is the development of prototype "species plans." In these plans, basic information about the species' biology is used to develop a program of education, monitoring, and pesticide use. Florida intends to deal with each species separately. The first prototype plan developed was for the snail kite, a bird. During drought years the snail kite comes in closer contact with agriculture than during periods of normal precipitation. Under the proposed Florida plan, water levels within conservation areas will be monitored in order to anticipate when snail kites are likely to move into drought areas. At such times, the plan's pesticide-use program will go into effect in these areas. At other times, when the snail kites are back in water conservation areas, applications of pesticides in central Florida should not affect this species. State plans which are as finely tuned as Florida's will provide as much protection as possible for endangered species while minimizing effects on pesticide users.

For followup on this plan or the national endangered species protection plan

CONTACT: SHELLY WITT

(703) 235-8017

AERIAL SPRAY MODEL TRAINING SCHEDULED

Four workshops have been scheduled for the purpose of providing familiarization and training on use of the Forest Service Cramer, Barry, Grimm (FSCBG) model. The workshops are scheduled as follows:

November 13-17, 1989	Corvallis, OR
December 4-8, 1989	Corvallis, OR
January 8-12, 1990	Clemson, SC
February 5-9, 1990	Clemson, SC

Each workshop will be similar; however, the Corvallis sessions will emphasize insecticide and herbicide application under western forest conditions and the Clemson sessions will emphasize pesticide application to control gypsy moth in the East. The Corvallis sessions will use personal computers and the Clemson sessions will use the Data General (DG). The workshop objectives will be to familiarize and train technical and supervisory personnel who have responsibility for planning and conducting aerial application projects, in use of FSCBG. The model can be used to develop input for NEPA documents, to develop contract specifications; to plan buffer zones; to select site specific spray parameters; to select application equipment and rates; and to predict spray drift, drop evaporation, deposition, and canopy penetration.

Workshop modules are: Introduction to Pesticide Application; Computer Skills Orientation; Inputs to the FSCBG Model; Using FSCBG to Predict Aircraft Spray Dispersion and Deposition; and Operational Use of FSCBG.

The workshops are open to all persons including Forest Service and other federal agency personnel, State and university cooperators, and industry. Tuition costs for the Corvallis sessions are: \$300.00 for Forest Service, other Federal and State cooperators who bring a personal computer, otherwise \$600.00; and \$600.00 for industry persons who bring a computer, otherwise \$900.00. Instruction will be given on a personal computer 386 with math co-processor. FSCBG will be installed on the DG by January 1990 and will be available for instructional purposes at Clemson.

Tuition costs for the Clemson sessions are: \$450.00 for Forest Service, other Federal and State cooperators, and \$900.00 for industry persons. Instruction will be given on the Data General; however, State and industry personnel may bring their 386 personal computer for individualized training.

Workshop announcements and application brochures are being prepared for distribution; however, if you have questions

CONTACT: JOHN W. BARRY

(916) 758-4600

NEW ELM BARK BEETLE TRAP AVAILABLE

A new pheromone trap for monitoring European elm bark beetle, the vector of Dutch elm disease, is available from Dewill, Inc. The traps have been shown to provide effective and economical means of beetle population monitoring.

CONTACT: DEWILL, INC.

(312) 442-6009

ANIMAL DAMAGE CONTROL CONFERENCE SCHEDULED

The Fourth Eastern Wildlife Damage Control Conference is scheduled to be held September 25-28, 1989 in Madison, Wisconsin. This biennial conference, although emphasizing animal damage control in eastern States, will include many topics of national interest. For example, two papers will be devoted to the USDA, Animal and Plant Health Inspection Service, Animal Damage Control Program. In addition, EPA will present an update on vertebrate pesticide availability. Several other papers will address predator control. A paper by University of Nebraska researchers entitled "GOPHER: A Computerized Cost-Benefit Analysis of Pocket Gopher Control" should be of particular interest to forest managers.

For additional information on this conference, check with the Forest Service's National Animal Damage Control Manager

CONTACT: HUGH C. BLACK, JR.

(503) 326-4091

CARE ADVISED IN USE OF FOREST PEST REPELLENT

Deet^R (N,N-dimethyl-m-toluamide), a commonly used insect, tick, and mite repellent, has recently been implicated in causing minor human health problems. For example, overuse or misuse of Deet^R may be causing headaches, mood changes (crying and irritability), confusion, nausea, and in severe cases muscle spasms, convulsions, and unconsciousness among sensitive individuals. Although most reported cases of Deet^R toxicity involve accidental exposure, fear of Lyme disease, Rocky Mountain spotted fever, and other maladies may be causing persons to overexpose themselves. EPA in a recent Consumer Bulletin recommends: Application only to exposed skin and clothes, not under clothing; avoidance of application to cuts, wounds, irritated skin, eyes, or mouth; avoidance of application to children's hands; and washing with soap and water between uses. Use of Deet^R is not being curtailed but EPA requests that adverse effects be reported

CONTACT: NATIONAL PESTICIDE TELECOMMUNICATIONS NETWORK

1-800-858-7378

CHLORPYRIFOS REGISTRATION STANDARD AVAILABLE

Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, the U.S. Environmental Protection Agency conducts systematic reviews of pesticides to determine whether they meet the criteria for continued registration. The EPA review culminates in the issuance of a Registration Standard, a document describing EPA's regulatory conclusions about the pesticide under review. Before finalizing Registration Standard documents, EPA makes a draft available for public comment.

A draft Registration Standard for the active ingredient chlorpyrifos is now available for review with comments due October 16, 1989. A copy of the Registration Standard may be obtained from EPA

CONTACT: EPA

(703) 557-2805

NATIONAL STEERING COMMITTEES TO MEET AGAIN

In 1988, the Forest Service established four National Steering Committees to focus expertise on field and pilot tests for aerial application of pesticides in these subject areas: (1) defoliators of western conifers, (2) gypsy moth and other eastern defoliators, (3) insects of seed orchards, and (4) vegetation management. Recommendations from the Steering Committees were important to several pesticide-use projects in 1989 and it was decided that the Steering Committees should continue into 1990. As a result, four additional meetings have been scheduled as follows:

<u>Subject</u>	<u>Place</u>	<u>Date</u>	<u>Local Arrangements</u>
Western Defoliators	Albuquerque, NM	October 11-12	Jesus Cota
Gypsy Moth and other Eastern Defoliators	Columbus, OH	November 1-2	Dick Reardon
Seed and Cone Insects	Salt Lake City, UT	November 8-9	Jed Dewey
Vegetation Management	Sacramento, CA	March 7-8, 1990	Jack Barry

Committee members at these meetings will review goals and objectives, review 1989 pesticide project results, identify new field test and pilot project needs, assign priorities, and recommend geographic locations where the projects should be conducted in 1990. Committee reports will be submitted to the Chief.

Followup on any of these Steering Committee meetings may be with the local arrangements person or the National Coordinator (J.Barry:SCS06)

CONTACT: JACK BARRY

(916) 758-4600

DIFLUBENZURON USE AT AIPM

The Appalachian Integrated Pest Management (AIPM) gypsy moth project is sponsoring a series of studies to determine if there are adverse environmental effects on selected non-target organisms following the aerial application of diflubenzuron to hardwood watersheds on the Fernow Experimental Forest in Parson, WV. The studies will be conducted over three years--Year 1, pre-treatment monitoring; Year 2, treatment and continued monitoring; and Year 3, post-treatment monitoring. Two watersheds will be randomly assigned to each of two treatments--treatment with diflubenzuron and untreated controls. Non-target organisms that will be monitored include: soil microflora (e.g., ectomycorrhizal fungi, cellular slime molds etc.), terrestrial and aquatic salamanders, leaf litter arthropods, aquatic macro-invertebrates, canopy arthropods, and brook trout. For additional information on these studies

CONTACT: RICHARD REARDON

(304) 291-4891

COURT RULING IN ENDANGERED SPECIES CASE COULD END STRYCHNINE REGISTRATIONS

In a highly significant decision, the U.S. Court of Appeals for the Eighth Circuit recently ruled that the U.S. Environmental Protection Agency (EPA) had violated the Endangered Species Act (ESA) by registering strychnine, and that this "resulted in unauthorized takings of endangered species." (See "Short Subjects..." Issue No. 88-5)

The result, unless reconsidered by the Eight Circuit or overturned by the Supreme Court under appeal, is that all strychnine registrations could be in jeopardy. For this to happen however, a citizen suit has to be filed against EPA to assert ESA violations.

The Appeals Court also concluded, "The District Court was without jurisdiction to consider the claim of Defenders of Wildlife that EPA acted arbitrarily, capriciously, and not in accordance with the law." The conclusion of the Appeals Court was, "First, Defenders could properly proceed under the citizen suit provision of the ESA to enjoin claimed violations of the Act. Under the circumstances presented, the EPA's strychnine registrations constituted takings under the ESA. The Secretary (of the Interior) did not authorize these takings, and thus, they were not excused through the incidental taking provisions of ESA. We affirm the District Court to this extent. On its own initiative, however, the EPA may seek to have the injunction lifted by showing it has now complied with the incidental taking provisions of the ESA."

The Court's ruling observed: "First, the record shows endangered species have eaten the strychnine bait, either directly or indirectly, and as a result, they have died.... Second, strychnine can be distributed only if it is registered. Consequently, the EPA's decision to register pesticides containing strychnine or to continue these registrations was critical to the resulting poisonings of endangered species. The relationship between the registration decision and the deaths of endangered species is clear. We thus conclude the EPA's registrations constituted takings of endangered species.... Because the EPA acted without an incidental taking statement, the takings violated the ESA."

The Court further said that, "An agency must obtain an incidental taking statement before it takes the protected species. The 1988 FWS (incidental taking) statement does not retroactively excuse the takings that occurred before the Secretary issued the statement."

MORE ON STRYCHNINE

It has recently come to the attention of the USDA Forest Service that the Animal Plant Health Inspection Service (APHIS) has voluntarily cancelled registrations of strychnine salt porcupine blocks (EPA Registration No. 56228-4). The voluntary cancellation was requested based on minor use; however, the Forest Service, a user of porcupine salt blocks, was not consulted prior to the cancellation request to EPA. Current stocks of blocks may be used, however, future supplies of this product will not be available.

CONTACT: MAX OLLIEU

(703) 235-1560

ORGANIC FOOD FANTASY?

(Commentary by W.T. Brookes, Washington Times, August 21, 1989)

A gigantic and costly hoax is about to be perpetrated on American consumers in the name of safety and health. The hoax is a plan supported by the fruit and vegetable industry (who see a premium-price bonanza) to get Congress to adopt the first-ever national standards for labeling "organic foods" so consumers can be sure they are "safe." Yet foods raised "organically," that is, without using chemical pesticides, are not only 25 percent to 50 percent higher in price, they are also potentially more dangerous to your health than those using conventional pesticide agriculture.

This is the clear implication of the work of one of the nation's top cancer researchers, Dr. Bruce Ames, chairman of the biochemistry department at the University of California at Berkeley. Dr. Ames was once the hero of the environmental (and organic foods) movement, because he developed the well-known Ames test used to expose the dangers of pesticide carcinogens. But over the last decade or so of further research into food chemistry, he has discovered two important things that made him conclude that chemical pesticides at normal levels are "harmless" and foods raised without them might even be more carcinogenic. In a recent interview Ames said, "First, 99.9 percent of all the pesticides we ingest, by weight, are natural, produced by the fruit and vegetable plants themselves as part of their protective mechanism. Probably 5 percent of every plant's dry weight is a natural pesticide."

"Importantly, the proportion of natural pesticides that test positive on rats as carcinogens (about half) is about as high as for synthetics. If this trend continues, this suggests that we are ingesting up to 10,000 times the weight of natural carcinogens in fruits and vegetables as of synthetics." But, Dr. Ames hastens to add, "This doesn't mean fruits and vegetables are dangerous. In fact, as last March's National Research Council report demonstrates, eating lots of fruits and vegetables is a good way to prevent cancer and promote health. I am just trying to help you understand that at such low doses, carcinogens--natural or man-made--are much less dangerous than we thought."

Indeed, it was Dr. Ames' discovery of the real extent of our ingestion of "natural carcinogens" that made him realize that the tiny traces of synthetic pesticides were probably meaningless. For example, he says, "everyone worries about minute amounts of dioxin, but there is a lot more of a dioxin-like compound naturally in broccoli than you will ever be exposed to through dioxin contamination in the environment."

Ironically, Dr. Ames and others have discovered that fruits and vegetables cultivated to be organically resistant to pests can have even higher levels of natural pesticide carcinogens. "You have to understand that plant evolution is a process of continual chemical warfare, with plants constantly generating chemical defenses against pests. Even while it is growing, the more stressed a plant is, that is, the more it is subjected to pests, leaf molds, and other blights, the more natural chemical pesticides it will generate."

Dr. Ames warns, "One consequence of our disproportionate concern about tiny traces of synthetic pesticide residues is that plant breeders are developing highly insect-resistant plants, thus creating other potentially more serious risks." "For example, Dr. Ames says that "a major California grower introduced a new variety of highly insect-resistant celery into the market. Suddenly, the Center for Disease Control was barraged with complaints from people who handled this celery and developed a severe rash when they were subsequently exposed to sunlight. Sharp detective work uncovered the fact that this pest-resistant celery had 10 times the level of psoralens, which are light-activated carcinogens. Yet this 'organic' product is still on the market."

Dr. Ames' organic foods critics argue that synthetic carcinogens are more dangerous to human health than "natural" ones, because the plants' natural anti-carcinogens can't deal with them. Dr. Ames insists "That's nonsense. Humans and animals have many general defenses such as anti-oxidants that simply do not distinguish between natural or synthetic carcinogens." What troubles Dr. Ames the most is the notion pushed by environmentalists that "natural" is "benign" while "synthetic" is automatically harmful and dangerous. "If this were true, why are Americans healthier today than they have ever been? Why are all cancer death rates flat or trending down, except lung cancer, where smoking is the main cause? One reason is that thanks in part to agricultural chemistry, Americans have more fresh fruits and produce at a lower cost."

In fact, Dr. Ames said, "I usually don't buy organic food. It isn't worth the extra cost. Organic foods are selling because Americans have been sold unreasonable fears of modern technology." Now, some in the food industry want to cash in on those fears.

END

**SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS**

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CORRECTION NOTE

The **Annual Report of the Forest Service, Fiscal Year 1988**, had a significant error in Table 44, the Pesticide-Use Report. A copy of the Table was distributed via a Pesticide-Use Advisory Memorandum (PAM No. 441, June 13); however, the error was only recently noted. All recipients of the Report and PAM 441 are encouraged to make a pen-and-ink change consistent with this statement:

"The number of pounds indicated for diflubenzuron (76,429) is in error. The maximum rate of application of diflubenzuron for forestry purposes is 4 ounces per acre, therefore, the quantity used on 38,332 acres was about 9,583 pounds."

For followup

CONTACT: LARRY GROSS

(703) 235-8209

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

PESTICIDES, FOOD, WATER, AND THE 1990 FARM BILL

According to the National Academy of Sciences (as reported in **Pesticide and Toxic Chemical News**, Vol. 17, No. 20), pesticide residues in water and food will be among the top concerns of environmental and consumer groups going into debates on the 1990 Farm Bill. Dr. Charles Benbrook, Staff Director of the NAS Board on Agriculture told a recent Food and Agriculture Policy Conference sponsored by the National Governors' Association that "frustration" with EPA is behind environmentalists aggressive push to address pesticide and water quality issues "extensively" in 1990. "The reason there seems to be a lot of interest all at once on water quality and pesticide issues," Benbrook said, "is that a year ago the big environmental groups decided they were tired of being nice guys and working with the chemical industry and EPA to achieve a negotiated chemical policy...."

They have come to the conclusion that EPA isn't going to do anything until mothers start dumping apple juice down the drains and that a tough, new public stand is in order. "There is also a deep well of unfulfilled public demand for some sort of reasonable risk reduction in the areas of water quality and pesticides and the environmental groups have decided to tap it." After noting that "data are uneven about pesticide contamination in groundwater" Benbrook went on to say that discussion on the 1990 Farm Bill will probably debate "specific difficulties with certain kinds of pesticides." "I expect there will be some move to look at agricultural chemicals which are applied to control pests at the root level," Benbrook said, continuing, "These chemicals need to be dug into the soil, and because they are supposed to work over a period of time they tend to be very stable. These two factors make them ideal for contaminating groundwater." Benbrook also noted that although "these chemicals might not be in the water supply now, in 5, 10, or 25 years they could be there. "Soil based pesticides are patient," he said.

CONTACT: CHARLES BENBROOK (NAS)

(202) 334-2000

CANADIANS TRY ULV BT

In a recent report (FPM-X-84) from the Forest Pest Management Institute in Sault Ste. Marie, Ontario, Canada, authors K. van Frankenhuyzen et al., indicate that ultra-low volume (ULV) applications of undiluted formulations of Bacillus thuringiensis (Bt) against forest defoliators such as the gypsy moth hold promise. There is a need, however, to test further using higher potency products at even lower volumes than were used in 1988. For a copy of the results of Canada's effort to evaluate ULV Bt

CONTACT: INFORMATION SERVICES
FOREST PEST MANAGEMENT INSTITUTE
FORESTRY CANADA
1219 QUEEN STREET, EAST
SAULT STE. MARIE, ONTARIO

FS TOXICOLOGIST PRESENTS POSTER PAPER IN ENGLAND

Dr. Zdenka Horakova, Forest Service toxicologist with Forest Pest Management, recently attended the V International Congress of Toxicology in Brighton, England. Dr. Horakova reported that over 1,000 scientists from all over the world attended this meeting; however, "it was held in great secrecy," she said. Animal rights people threatened to disrupt the sessions, therefore, there were no press releases, local media announcements, or welcome mats.

At the symposium particular emphasis was placed on:

- Toxic mechanisms of xenobiotics and their metabolism and kinetics,
- Molecular bases for inherited susceptibility to carcinogens,
- Toxicologic risk assessments,
- Biotechnology,
- Food additives and natural toxins,
- Evaluation of environmental carcinogenic risk through mode of action,
- Ecotoxicology and its relevance to society,
- Immunotoxicology,
- Influence of age on toxic damage,
- Reproductive toxicology,
- Toxicology in developing countries,
- Influence of animal husbandry on toxicologic studies,
- Mechanism of action of antidotes, and
- Relevance of drug metabolism in carcinogenicity.

Dr. Horakova and Dr. Brown, a USDA toxicologist with the Food Safety and Inspection Service presented a paper at a poster session on the use of risk assessments by the USDA to identify pesticide and other xenobiotic hazards and the methodology used to inform decisionmakers and the public of those hazards.

While in England, Dr. Horakova also participated in a satellite symposium on "Foreign Compound Metabolism," at the Royal College of Physicians, Regent's Park, London.

For followup on either of these symposia

CONTACT: DR. ZDENKA HORAKOVA

(703) 235-8209

INTERNATIONAL TECHNOLOGY TRANSFER

A recent trip by Forest Service researchers to the Republic of China resulted in a request to have a popular guide for the "Ground Application of Forestry Herbicides," translated into Chinese. James H. Miller, a researcher at the Southern Station project on Control of Undesirable Vegetation in Southern Pine Forests was instrumental in coordinating the acquisition of Forest Pest Management and Research funds for this technology transfer effort, which supports U.S. interest in tropical forestry. For followup

CONTACT: JIM MILLER

(205) 826-8700

PESTICIDE EXPORTS REPORT

Pesticides are used globally to kill and control an enormous variety of unwanted plants or pests. Over the past 30 years, the types and amount of pesticides have dramatically increased. Although the U.S. is not the leading exporter of pesticides, U.S. pesticide export sales are estimated to represent approximately one-quarter of the world pesticide market. Some of these exports have been banned for use in the U.S. Furthermore, countries receiving U.S. pesticides may, in turn, export food that has been treated with these pesticides to the U.S. and other countries. While pesticides are recognized as important components in meeting the increasing demands for food and in the fight against insect-borne diseases, they also have the potential to create serious problems affecting human health and the environment.

Concerned about the U.S. role in adequately notifying foreign governments of the export of pesticides that are not allowed to be sold here, the Chairman, Environment, Energy, and Natural Resources Subcommittee, House Committee on Government Operations, requested that the General Accounting Office (GAO) review the implementation of the notification requirements under Section 17 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended. GAO conducted a review and found that EPA has yet to establish an effective program to determine whether pesticide manufacturers are complying with the export notification requirements.

EPA's current enforcement policy concerning certain unregistered pesticides greatly hinders any effort it might make to monitor compliance. EPA's policy in effect, exempts the majority of unregistered pesticide exports from the notice requirement. In addition, EPA does not have internal procedures for preparing and issuing notices to foreign countries and international organizations when it has taken significant action on a pesticide because of a serious health or environmental concern. GAO found that notices were not sent for three pesticides (out of four) that were voluntarily canceled because of concern about toxic effects. As a result, foreign governments may not be alerted to unreasonable hazards associated with particular pesticides.

These results are printed in a report released by GAO, April, 1989, entitled "Export of Unregistered Pesticides is Not Adequately Monitored by EPA." For a copy of the GAO report (RCED-89-128 Pesticides)

CONTACT: GAO

(202) 275-6241

PINE, PLASTICS, AND ANIMAL DAMAGE CONTROL PESTICIDES

Tired of having his garbage bags trashed by dogs, cats, and other animals, Charles Atkinson approached his employer with the idea of developing a bag so malodorous that it would repel scavengers and other animals. Chemical giant Du Pont gave him the go-ahead, and Atkinson, a product manager at the company's Sabine River Works plant in Orange, Texas, went to work devising a sack with a smell that animals would have an aversion to. The result is a varmint-repelling scent that clings to the polyethylene in plastic bags.

This summer, the company began testing Pet Master garbage bags with homeowners in the Houston area. To relatively dull-nosed humans, the bags give off a pine smell, but to animals with more sensitive snouts, the odor is overwhelming, says Pat Getter, Du Pont's regional affairs director in Houston. She compares its effect to perfume--pleasant in small doses but overwhelming when doused on.

"The smell does more than mask the odors of the garbage inside, it actually repulses the animals," she says. The company has not determined how it will market the bags nationwide. "Since we do not currently manufacture plastic bags, we still have to decide if we are going to produce this product ourselves or license the technology to another company," she says.

If you think there is potential for pine and plastic combinations to assist in your pest control situations

CONTACT: DU PONT

1-800-441-7515

IUFRO NEWS

The International Union of Forestry Research Organizations (IUFRO) has announced plans for the XIX World Congress, which is to be held in Montreal, Canada, August 5-11, 1990. The theme of the Congress will be "Science in Forestry: IUFRO's Second Century."

IUFRO links 15,000 scientists from almost 700 research institutions and agencies in 102 countries. It is the international focal point for information exchange, training and innovation, and forestry research and development. Its main aim is to promote international cooperation across the entire spectrum of research related to forestry.

An IUFRO Congress is a combination of many things--ceremony, scientific exchange, expositions, business meetings, excursions, social events, and professional camaraderie.

For registration information on the XIX World IUFRO Congress

CONTACT: IUFRO MONTREAL 1990, INC.
BOX 1990, PLACE D'ARMES
MONTREAL, QUEBEC,
CANADA H2Y 3L9
(819) 997-1107

PESTROY HACK AND SQUIRT DOESN'T WORK

Recent tests of the use of a novel technique for possible control of southern pine beetles using Pestroy 8E (fenitrothion) and "hack and squirt" methods have proved disappointing. The southern pine beetle, Dendroctonus frontalis, is generally considered to be the most important pest of southern pines. Outbreaks across the South periodically kill large volumes of timber and pulpwood worth millions of dollars. Additionally, many high value trees such as those in yards, parks, seed orchards, etc., may be lost to the beetle, especially when epidemic populations occur over wide areas.

Current operational control techniques consist of salvage, "cut and leave," pile and burn or chemical control with aqueous sprays. Chemical control is usually preventive and applied only to high value trees, although remedial spray treatments may be used. During epidemics, many southern pine beetle infestations are not treated by any suppression technique due to high costs, inaccessibility or unavailability of the necessary labor force. There is a need for a spot treatment technique that is less labor intensive and does not require specialized or heavy machinery.

The most recent beetle epidemic in the westernmost portion of the beetles' range devastated large areas with thousands of active spots. During that time a new treatment technique dubbed "Pestroy Hack and Squirt" was developed. The method consists of using axe frills around tree boles and injecting the frills with Pestroy 8E.

The qualities desirable in a systemic such as fenitrothion for bark beetle control are: (1) Target toxicity, (2) mobility in host tissue, and (3) longevity in host tissue. Fenitrothion has shown some of these qualities in the past. Pestroy "hack and squirt" was initially registered for use in a few States (24C registration) and subsequently registered by EPA for southern pine beetle control in 1987. When claims and counter claims of efficiency began to surface, funding was provided for studies at the University of Arkansas, the University of Georgia, and Louisiana State University to determine if the method was effective.

The results indicate that Pestroy does not move significantly in trees treated by this method. Residues were very low or undetectable in most samples taken at all heights. Brood production in billets from treated trees was not significantly different from untreated trees or those with bark hacks only. Numbers of beetles trapped on treatment trees were similar to those on check trees, indicating no substantial repellency. Since Pestroy does not significantly affect attack density or brood production and leaves low or non-existent phloem/sapwood residues, it cannot be considered a viable option for southern pine beetle control. For followup

CONTACT: J. W. TAYLOR

(404) 347-2961

BUGS, BRUSH, AND BIOCONTROL

Ranchers' biggest brush problems are about to be pitted against imported enemies from South America and the Middle East. Brush such as snakeweed, saltcedar, baccharis, and mesquite are the problems. These plant species have some benefits, but they also compete with more desirable plants for water and nutrients. Therefore, biological control is being attempted.

Snakeweed (Gutierrezia sp.) is considered the most troublesome brush species on rangelands in the West where it covers about 143 million acres. A dense perennial shrub that grows only about a foot tall it competes with other plants. It also causes cows to abort when they consume it. Cooperative efforts with a biological control laboratory in Argentina have turned up two insects that may break snakeweed's grip in the U.S. One, Heilopodus ventralis, is a weevil that bores into snakeweed roots. The second, a moth called Carmenta haematica is also a root borer.

Another brush target for biological control is mesquite (Prosopis sp.). Mesquite is a knotty, thorny tree that can grow 30 feet tall and infests about 94 million acres of U.S. rangeland. Mesquite is a major weed. It uses water and competes with grass but the chances of finding a natural enemy of mesquite in South America appear good.

Saltcedar (Tamarix sp.), first introduced in the U.S. from the Middle East in 1837 as an ornamental, also poses a problem with its double identity as both pest and ornamental. A bushy tree that forms dense thickets, saltcedar grows to heights of 30 feet. Its leaves secrete salts, which form a layer on the ground around their bases preventing other plants from growing and crowding out native vegetation. Biological control of saltcedar shows promise since at least a dozen species of insects are known to feed on it.

Another important brush problem is baccharis (Baccharis sp.), a willowlike woody shrub that grows 15 to 20 feet tall and has an extensive root system. Like saltcedar, baccharis competes with grasses for any available water. A potential biological control is a beetle called Stolas fuscata. It feeds on the leaves and does a good job of defoliating plants, therefore, having the potential to be used as a biocontrol and possibly reducing herbicide use.

For followup on research being conducted on these bugs and brush

CONTACT: C. JACKSON DELOACH, JR. (817) 770-6537

BIOLOGICAL CONTROL AGENT FOR AFLATOXIN

Gustafson Inc., a Dallas-based subsidiary of Uniroyal Chemical Co., has signed an agreement with two Japanese companies, Sumitomo and Moriga, to develop a biological control agent for aflatoxin. Aflatoxin is a carcinogen produced by naturally-occurring Aspergillus molds. The biological control agent is a naturally-occurring strain of Bacillus subtilis found on one of the Japanese islands. Patents have been applied for and lab testing will begin in the U.S. in August. Plans are to expand to field testing in 1990. For followup

CONTACT: GUSTAFSON, INC. (214) 985-8877

WHITE AMUR MAY REPLACE HERBICIDES

A type of carp native to the Soviet Union and China that likes to feed on hydrilla and other aquatic weeds has proved a worthy import for U.S. agronomists. Introduced in America more than a decade ago and studied by Arkansas researchers, the white amur is being released into ponds and lakes in a few Southern States. Researchers have confirmed the carp can survive and do the same job in the U.S. that they do in their native waters, so a new tool is available to control aquatic weeds without using chemical herbicides.

With large scales and a silvery color, the amur, also known as the grass carp, looks much like others in its family, but it does not scrounge in the mud for its food like other carp.

To effectively clean a body of weed-infested water, about 10 to 20 fish per acre are needed. The carp might not produce visible results for a year or two, say the researchers, but they work longer at much less cost than chemicals and pose no threat to other fish or the environment.

NATIONAL ANIMAL DAMAGE CONTROL MEETING HELD

National Animal Damage Control (ADC) program manager Hugh Black moderated a meeting on the Targhee National Forest, August 2-3, 1989. Status reports of regional ADC conditions and activities were reported by representatives from Forest Service Regions 1, 4, 5, and 6. The Animal and Plant Health Inspection Service (APHIS) had five representatives at the meeting including Jim Evans and Guy Connolly. Numerous pesticide-related issues were discussed including: strychnine use for gopher control; National Agricultural Pesticide Impact Assessment Program (NAPIAP) projects and proposals for FY 1990; upcoming APHIS ADC Draft Environmental Impact Statement; and recent accomplishments and plans affecting the Forest Service ADC program. A field visit to a pocket gopher control study involving NAPIAP funds was held August 3. For more information on this workshop

CONTACT: MAX OLLIEU

(703) 235-1560

END

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NOTICE

In Issue No. 89-10 of "Short Subjects and Timely Tips for Pesticide Users," Larry Gross was identified as the followup contact for copies of the report "Proceedings of the Carnation Creek Herbicide Workshop." Larry is the contact for distribution to USDA Forest Service personnel; however, others interested in the publication should

CONTACT: FORESTRY CANADA
PACIFIC FORESTRY CENTRE

506 W. BURNSIDE RD.
VICTORIA, B.C., V8Z 1M5

PESTICIDE FACT SHEETS

As the U.S. Environmental Protection Agency continues its processes of Special Review and reregistration of pesticides, they update their "Pesticide Fact Sheets." For example, two new Fact Sheets cover the active ingredients rotenone and malathion. Another Fact Sheet summarizes data on formaldehyde, a chemical formerly considered an "inert" in pesticide formulations but now registered as a separate product. For copies of these Fact Sheets

CONTACT: DENNIS R. HAMEL

(703) 235-8209

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

AGENCY SEEKS INPUT ON RPA

The USDA Forest Service is asking its employees and the public to review and comment on a draft plan that will provide program direction for the agency's natural resource activities for the next five years. The FS is required to develop a plan every five years under the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974. The current RPA program plan will be the fourth since the passage of the act. The RPA draft describes five different strategies for long-term management. Each includes management direction for the National Forest System, State and Private Forestry, and Research.

The draft plan covers FS roles in many aspects of natural resource operations, including topics such as multiple-use management, contribution to local economies, management in mixed ownerships, inventory and analysis, environmental communication, and international forestry. Also described in the draft are several contemporary issues, such as riparian management and changing recreation needs, which face the FS and how the agency is seeking to respond to each. Since pesticide use is often an alternative considered during the planning for long-term land management, it is incumbent that interested persons review and comment on the draft RPA plan as appropriate. All comments must be postmarked by October 3, 1989. To obtain a copy of the draft RPA plan or to ask questions

CONTACT: JIM MCDIVITT

(202) 383-8235

DIFLUBENZURON MOBILITY

In a recent issue of the *Journal of Environmental Science and Health* (B 24(1)) Canadian researchers summarize studies on "Mobility of Diflubenzuron in Two Types of Forest Soils." The report concludes that diflubenzuron "used properly in forest management, is unlikely to be leached into groundwater from a site of application.

Since the effects of diflubenzuron on non-target aquatic organisms and groundwater contamination are of concern to many publics, users of diflubenzuron and writers of risk assessments about diflubenzuron may want to review this study. For a copy of the report

CONTACT: DENNIS R. HAMEL

DG:D.HAMEL:W01A

BIOLOGICAL OPINION

The Department of the Interior's Fish and Wildlife Service (FWS) has forwarded recommendations to EPA on the use of 112 commonly used pesticides in order to safeguard endangered species. The recommendations are contained in a formal "biological opinion" requested by EPA in September 1988 under the Endangered Species Act. The report focuses on 165 endangered species, most of which are aquatic and 112 pesticides registered for four different use pattern (crops rangeland, forest, and mosquito control) in and around aquatic habitats. Copies of the biological opinion are available from EPA

CONTACT: EPA

(703) 557-2805

NEW HERBICIDE TECHNOLOGY

According to the latest issue of INSIGHT magazine, an herbicide cloth has been developed to control plant roots. The article claims that unmanageable plant roots can now be controlled for at least a century, much to the delight of city planners and golf course managers. A special cloth embedded with bubbles of herbicide, originally designed as a barrier to stop radon leaks from nuclear waste facilities, has proved effective in halting root growth. The special fabric was developed by researchers at Battelle Pacific Northwest Laboratories in Richland, Washington at the request of the Department of Energy after other methods, such as spraying herbicides onto the roots or trying to cut them out, proved ineffective at preventing radioactive gas from escaping into the environment via plant and tree roots.

The polypropylene fabric, which is sold in large rolls and intended to be buried, contains the active ingredient trifluralin encapsulated in small bubbles from which it slowly leaches out into the soil. The herbicide keeps the roots from spreading unchecked but does not kill the trees or plants above according to Battelle.

A spokesman says several city governments have shown interest in using the fabric to line the ground surrounding public swimming pools, tennis courts, sidewalks, and irrigation and sewer pipes. It may also have use in a number of forestry use situations. For followup

CONTACT: BATTELLE PACIFIC NORTHWEST

(509) 375-2121

SWEDES OFFER NEW HERBICIDE DELIVERY TECHNOLOGY

A legal firm in the U.S. (Provorny, Jacoby & Robinson) has been asked to assist a Swedish firm (Forest Injection Co.) in disseminating information about a new method of herbicide delivery for use in forestry. Since the Swedish government has banned all ground and aerial applications of herbicides, a new method was developed and is the only approved technique in use in Sweden today. The technique is called FICSAN and involves dry notching undesirable trees and inserting pellets that contain the active ingredient hexazinone. Being a translocatable herbicide, the hexazinone moves into the tree, selectively killing it, and preventing resprouts.

The FICSAN dry-notching method has been shown to be effective in controlling undesirable hardwoods, thinning of conifers, and single tree removal. The Swedish personnel involved with this new, more environmentally acceptable technology want to share it with others worldwide, therefore, if interested

CONTACT: MR. F.A. PROVORNY

(202) 223-4200

LYME DISEASE BOOK AVAILABLE

A new book has just been released by Dell Book Company entitled "Protect Yourself from Lyme Disease." The book includes 118 pages and was released this month and should be available at local book stores.

FOREST SERVICE ANNOUNCES PLANS FOR TWO NURSERY EIS'S

Coeur d' Alene Nursery, Idaho: The Forest Service announced in the July 6 issue of the Federal Register (Vol. 54, No. 128, p. 28451) that it will prepare an Environmental Impact Statement (EIS) for nursery pest management activities at the Coeur d'Alene nursery, Coeur d'Alene, Idaho. The activities to be covered by the EIS include: control of unwanted vegetation, diseases, insects, and other animals. The nursery management activities that require controls include the cover crop, seed pretreatment, nursery seedbed preparation, sowing seedling growth from germination to lifting, and seedling storage. The container nursery management activities that require controls include seed pretreatment, greenhouse rearing of stock in a soil-free media, and shelterhouse growth and production. Seed orchard management activities require controls for the production of healthy cones containing viable seeds.

The control methods under consideration include biological, chemical, manual, and mechanical techniques. The agency invites written comments on the scope of the analysis. The agency also gives notice of a full environmental analysis and decisionmaking process that will occur on the proposal so that interested and affected publics are aware of how they may participate and contribute to the final decision. Comments concerning the scope of the analysis must be received by August 21, a draft EIS is expected in April, 1990.

CONTACT: JOSEPH MYERS

(208) 765-7375

Ashe Nursery, DeSoto National Forest, Mississippi. The FS announced in the July 12 issue of the Federal Register (Vol. 54, No. 231, p. 29362) that it will prepared an EIS on nursery pest management practices that will be used at the Ashe Nursery, Brooklyn, Mississippi. Ashe Nursery grows longleaf, loblolly, and slash pine seedlings for the National Forests in the Southern Coastal Plains. The Ashe Nursery strives to produce quality seedlings, therefore, it needs to continue to evaluate the practices that are used toward this end. The management practices that will be analyzed in the EIS include, but are not limited to, cover crop, seed pretreatment, nursery seedbed preparation, sowing, seedling growth from germination to lifting, and seedling storage. In order to produce seedlings, control of unwanted vegetation, disease, insect, and other animals is necessary. The control methods that will be considered include biological, chemical, manual, and mechanical techniques. A draft EIS is expected to be available for public review by February, 1990.

CONTACT: ELLEN J. GOETZ

(601) 965-5486

AN AUSSIE FUNGUS AMONG US

An Australian fungus that kills grasshoppers shows promise as a natural pesticide in the U.S. according to scientists performing field tests in North Dakota. The fungus, Entomophaga grylli, produces enzymes that are capable of killing grasshoppers about a week after they become infected. The Aussie fungus is similar to one available in the U.S. except that it kills a wider spectrum of harmful hoppers, spreads more efficiently among hoppers, and appears more heat resistant than U.S. strains

Research on this fungus is being supervised by Dr. Ray Carruthers of the U.S.D.A.'s Plant Protection Research Laboratory, Ithaca, New York.
For followup

CONTACT: DR. CARRUTHERS

(607) 255-2456

NAPIAP PROJECTS FOR 1990

The Forest Service (FS) recently sent out a call letter requesting pesticide-related project proposals that, if funded, could help fill data gaps either the FS or the EPA have identified. Funding for these projects will be through the National Agricultural Pesticide Impact Assessment Program (NAPIAP).

EPA, in their reregistration and special review processes have identified environmental fate, exposure, and benefits of use as major data gaps of pesticides used in forestry. Therefore, the FS is encouraging research proposals on subjects such as:

Environmental Impact--studies in this area would examine the environmental impacts of pesticides including the potential for contamination of ground- and surface water, soil, air, and other segments of the environment such as impact on non-target organisms. These studies may include chemical degradation, biodegradation and binding of pesticides; management practices to reduce pesticide movement to groundwater; dislodgable residues; pesticide metabolism; residues on edible forest products; methods for reducing residues; testing methods for residues; impacts to non-target aquatic and terrestrial organisms; and impacts to wildlife, especially sensitive, threatened, and/or endangered species.

Exposure--studies of new methods to examine exposure in general; exposure to field workers; and information on exposure to the public. Exposure studies should involve new situations, consider the significance of exposure, and/or involve procedures for correcting or minimizing exposure.

Benefits--studies of the economic benefits of pesticide use in forestry.

Application technology--studies of innovative approaches to reducing the drift of and exposure to forestry-use pesticides.

Only studies on pesticides registered for forestry use will be considered for funding by the scientific panel that will review the proposals submitted to the agency. Highest priority will be given to the following pesticides:

Arsenal	<u>Bacillus thuringiensis</u>	Carbofuran
Diiflubenzuron	Fosamine Ammonium	Glyphosate
Hexazinone	Nursery Pesticides	Picloram
Triclopyr	Strychnine	2,4-D

Proposals for FY 1990 funding should be submitted by October 1 and emphasize short-term work which can be completed in one year. Multiyear studies will be considered, but they must have identifiable yearly accomplishments and budgets. Proposals aimed at developing alternatives to registered pesticides or at developing new uses of registered pesticides cannot be supported by NAPIAP funds.

Any questions on preparation of proposals, obtaining copies of the "Guidelines for Preparing NAPIAP Proposals," or EPA's Subdivision N, Pesticide Assessment Guidelines, should be directed to WO-FPM

CONTACT: ZDENKA HORAKOVA

(703) 235-8209

BUSINESS BRIEFS

Safer, Inc., Newton, Massachusetts, reported that sales of non-toxic, biodegradable pesticides have more than doubled over the last three months in comparison to sales for the same period last year. They attribute the increase to consumers' growing concerns over residues left by synthetic pesticides in drinking water, food, and home and gardens. Safer, Inc. estimates that it now holds a greater than 65 percent share of the market for non-toxic, biodegradable pesticides. For more information

CONTACT: FRED DE FINIS

(617) 964-2990

Evans BioControl, Inc. (EBI), producer of biological insecticide baits, has signed an exclusive worldwide distribution and sales agreement with Ciba-Geigy Ltd. Under the agreement, Ciba-Geigy, Basel, Switzerland, gains exclusive worldwide rights (excluding the U.S. and Canada) to EPI's biological grasshopper and locust control agents. For further information

CONTACT: JERRY N. DUFF

(816) 891-8845

Dow Chemical Company and Eli Lilly Company have announced a new joint venture to be called Dow Elanco, Inc. The venture will combine the plant science and industrial non-crop businesses of the two parent companies. It is believed this will provide for a more efficient research and development organization targeting new products for the industrial vegetation business. For followup

CONTACT: MS. SUSAN SCHIMEL

(517) 636-1000

MEETINGS/CONFERENCES

DuPont Corporation, which has already held three seminars in June in San Antonio, Texas, and Charleston, S.C. and in July in Wilmington, Delaware, on managing risk communications, has four more of the two-day seminars planned: August 9 and 10, in Seattle, Washington; September 13 and 14, in Williamsburg, Virginia; October 11 and 12, in San Francisco; and November 8 and 9, in Dallas Texas. For registration information

CONTACT: DU PONT, CORP.

(302) 999-6977

The Center for Energy and Environmental Management (CEEM), Fairfax Station, Va., is sponsoring two conferences of interest to pesticide-use personnel: The 1989 Washington Conference on Risk Assessment, September 26-27 at the Holiday Inn Crowne Plaza, Washington, D.C., and the 1989 Washington Conference on Pesticides, October 11-12, Washington, D.C. For registration information

CONTACT: ROBIN GILDERSLEEVE

(703) 250-5900

END

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PESTICIDE POISONING HANDBOOK AVAILABLE

The U.S. Environmental Protection Agency recently published a new pesticide poisoning handbook entitled "Recognition and Management of Pesticide Poisonings." Copies will be sent soon as an Advisory Memorandum, for others

CONTACT: EPA

1-800-858-7378

POISONOUS PLANT INFORMATION DATABASE AVAILABLE

The largest source of information on poisonous plants in the world is contained in a database called Poisonous Plant Information System (PPIS). PPIS is a comprehensive computerized database that is available for on-line access or transfer to other computers. For direct online access or other information

CONTACT: D. JESSE WAGSTAFF

(202) 245-3115

CORRECTION

It was reported in "Short Subjects and Timely Tips" Issue No. 89-10 that butternut would cross with black walnut to produce butternut canker disease resistance. This was in error since the two cannot be crossed.

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1989 PEST MANAGEMENT ACTIVITIES COMPLETED

In 1989, various pest management activities were conducted on National Forest System lands and in cooperation with States and other Federal cooperators. The following is a summary of completed pest suppression and eradication projects.

PEST/SITE/ PROGRAM	INSECTICIDE USED			TREATMENT ACREAGE
	Bt	Diflubenzuron	Virus	
<u>GYPSY MOTH</u>				
Delaware				
Coop	14,185	25,515	0	39,700
Idaho				
Couer d'Alene/ Sandpoint Erad.	1,140	0	0	1,140
Maryland				
Coop	118,494	45,410	0	163,904
ARS	3,286	126	0	3,412
Catoctin Mtn.	5,736	0	0	5,736
C & O Canal	2,532	0	0	2,532
White Oak Naval Warfare Ctr.	50	250	0	300
Michigan Coop	72,600	0	0	72,600
New Jersey				
Agriculture	12,567	0	0	12,567
Forestry	3,679	0	0	3,679
North Carolina				
Hartford-Gates Eradication	8,518	5	0	8,523
Pennsylvania				
Coop	92,702	103,064	0	195,766
Allegheny NF	29,684	12,441	0	42,125
Utah				
Coop	3,300	0	0	3,300
Wasatch-Cache NF	300	0	0	300
Virginia				
Coop	38,864	112,382	0	151,246
AIPM Project	6,748	6,400	0	13,148
Dulles Airport	0	1,634	0	1,634
Ft. Belvoir	0	90	0	90
George Washington Memorial Parkway	1,872	0	0	1,872
George Washington National Forest	1,738	2,360	0	4,098
Giles County Erad.	8,568	22,057	0	30,625
Greenbelt & Baltimore Washington PW	714	0	0	714

Pest Management Activities (Continued)

Manassas Battlefield	230	0	0	230
National Zoo	0	378	0	378
Prince William NP	50	0	200	250
Shenandoah NP	550	1,660	0	2,210
Wolf Trap Farm Park	130	0	0	130
Dist. of Columbia*	6,652	0	0	6,652
National Arboretum	220	0	0	220
Natl. Capital Parks	141	0	0	141
Rock Creek Park	163	0	100	263
West Virginia				
Coop	220	50,819	0	51,039
AIPM Project	3,558	20,169	0	23,727
Harper's Ferry	1,860	0	0	1,860
GRAND TOTAL				
GYPSY MOTH	441,051	404,760	300	846,111

DOUGLAS-FIR TUSSOCK MOTH

California				
Plumas NF	45,300	0	0	45,300
Lassen NF	38,915	0	0	38,915
GRAND TOTAL-DOUGLAS-FIR TUSSOCK MOTH				
	84,215	0	0	84,215

WESTERN SPRUCE BUDWORM

Oregon				
Mt. Hood NF	7,000	0	0	7,000
Wallowa-Whitman NF	5,189	0	0	5,189
GRAND TOTAL-WESTERN SPRUCE BUDWORM				
	12,189	0	0	12,189

FOREST TENT CATERPILLAR

Wisconsin				
Menominee IR	2,029	25,471	0	27,500
GRAND TOTAL-FOREST TENT CATERPILLAR				
	2,029	25,471	0	27,500

*No funding from the USDA Forest Service

For followup on any of this years suppression or eradication projects

CONTACT: TOM HOFACKER (WO-FPM)

(703) 235-8209

INSECTICIDES BACKGROUND STATEMENT PUBLISHED

Volume IV of the Pesticide Background Statement series (Agriculture Handbook No. 685) was recently printed and will soon be distributed to interested parties. The document was compiled by the Mitre Corporation, McLean, Virginia. It covers four forest-use insecticides: acephate, Bacillus thuringiensis (Bt), carbaryl, and diflubenzuron.

Following precedence set in previous Background Statements (I. Herbicides, II. Fungicides and Fumigants, and III. Nursery Pesticides), Volume IV presents information on each insecticide in a standardized format. For example, each insecticide is described as to: Normal use patterns, physical and chemical properties; toxicity; environmental fate; and exposure and hazard assessment.

The Background Statements provide comprehensive reviews of data in the literature and serve as a basis for writing documents (e.g., EAs, EISs and risk assessments) that are in compliance with the National Environmental Policy Act (NEPA).

Copies of Volume IV. Insecticides will soon be distributed to Forest Service personnel and their cooperators. For followup

CONTACT: LARRY GROSS

(703) 235-8209

NEW BALLOON TECHNOLOGY

The Allegheny National Forest, faced with a much larger spray program for gypsy moth this year, and having contracted a DC-3 to perform the spraying, looked for a better way to get the spray blocks marked with balloons prior to the start of spraying each morning at about 5:30. In previous years the field crews had reported to work in the wee dark hours of the morning, sacrificing sleep to stumble through the woods in the dark to put the necessary balloons in place prior to that day's spraying. This year they switched to 36-inch balloons which were made of heavier rubber and also used a commercial florist supply product called "Hi Float". "Hi Float" is a thick liquid which is used to seal the inside of florist balloons so the helium doesn't leak out and the balloon stays aloft longer. The "Hi Float" comes in 1-gal containers with a hand pump for about \$50. Each balloon needs just enough "Hi Float" (usually 1 pump) to work the liquid around in the uninflated balloon until the entire inside is coated. Each gallon of "Hi-Float" does about 100 balloons.

Although the "Hi Float" added more weight to the already heavy balloons it did allow the Forest to place balloons as much as 2 or 3 days prior to spraying. If weather predictions called for good spraying then balloons were placed the afternoon prior when crews weren't sacrificing sleep and field operations were much safer in the daylight. Everybody appreciated the relative luxury of being able to sleep in later, although field crews still had to arrive at the spray blocks at daylight to replace any balloons that may have been lost overnight (balloons were checked by surveillance aircraft prior to sending the spray aircraft aloft).

Overall, the Forest appreciated the added flexibility, higher production capability, and increased safety afforded by this new balloon methodology and would like to share their experience with others.

For more information

CONTACT: DON CLYMER

(814) 723-5150

R-5 SEEKS PESTICIDE-USE SPECIALIST

The Pacific Southwest Region (R-5) has announced (R5-317-89) plans to fill a position in Forest Pest Management, State and Private Forestry. The GS/GM-12/13 position is that of a regional technical authority on all aspects of toxicology, mode of action, and environmental fate and impact of pesticides used for forest and range management. The selected applicant will provide leadership for the planning, organizing, coordinating, and implementing the safe and effective, and legal use of pesticides in the Region.

Selection criteria for the position include: Knowledge of toxicity and efficacy of pesticides used in the Pacific Southwest Region and how they fit the concepts of integrated pest management; skill in planning and implementing pesticide-use projects; ability to develop a Regional training program dealing with pesticides; knowledge of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended and the National Environmental Policy Act. Incumbent should also be able to develop a pesticide retrieval and dissemination system for the Region and be able to communicate well with counterparts at the field and Washington Office levels.

Persons interested in applying for this position should submit an SF-171, copy of latest performance appraisal, and a narrative statement responding to each selection criterion. Applications must be received by July 27, 1989.

For followup information

CONTACT: JACK DAWSON (R-5 PERSONNEL)	(415) 556-8226
JOHN NEISESS (R-5 FPM)	(415) 556-6520

HEAT STRESS VIDEOCONFERENCE SCHEDULED

The Federal Emergency Management Agency (FEMA), through its Emergency Education Network (EENET), will air a videoconference on July 19, titled "Heat Stress Induced by Chemical Protective Clothing." The program will begin at 11:00 a.m. and conclude at 3:30 p.m., Eastern Daylight Time.

Firefighters and other personnel at hazardous material worksites are subject not only to the dangers associated with hazardous materials, but also to physiologic stresses resulting from the workload imposed by the event, the ambient climatic conditions, and the wearing of full encapsulating chemical protective clothing.

These heat stresses may pose a significant metabolic penalty on the wearer of chemical protective clothing, therefore, the FEMA, in conjunction with the Federal Workgroup on Chemical Protective Clothing and Equipment Research and Development, has identified heat stress in chemical protective clothing as a priority issue. This videoconference is intended to provide background and guidelines for reducing protective clothing heat stress problems. This program will be of interest to anyone who has the responsibility of planning for, or responding to pesticide, fire, and/or other hazardous chemical emergencies.

Originating from the National Emergency Training Center in Emmitsburg, MD, this broadcast will be transmitted nationwide by satellite and can be accessed by a C-band antenna or satellite dish: Spacenet 1, Transponder 1, Channel 1, Downlink Frequency 3720 MHz, Audio Frequency 6.2/6.8 MHz. For followup

CONTACT: ROBERT T. MCCARTHY (FEMA)	(301) 447-1182
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EXPERT SYSTEMS FOR PEST AND PESTICIDE RISK ASSESSMENT

For 25 years, the most widely accepted paradigm in pest control has been integrated control or integrated pest management (IPM). While this concept has been extended to include most operational factors in pest management systems, in actual practice the focus has been integration of chemical pesticides and biological methods of pest control.

Integrated use of chemical pesticides with biological agents has led to a number of workable IPM programs, particularly in major, high-value agricultural systems. While the volume of research dealing with pesticide effects on natural enemies in agricultural systems is enormous, efforts to elucidate patterns of these effects and to make the data more readily accessible to pest managers and researchers have not been well coordinated according to the authors of a recent article in "AI (sic) Applications in Natural Resource Management (Vol. 3, No. 2, 1989).

However, pest managers are now making increasing use of computer technology to facilitate information flow through agricultural production systems. Both the quantity and quality of information are changing as computers replace traditional sources. One of the most rapidly expanding aspects of computer-aided information management is the use of artificial intelligence (AI) and expert systems to assist in the decisionmaking process.

Expert systems are computer-based programs that attempt to simulate the complex decisionmaking process of human experts in limited domains. Listed below are several examples of expert systems that may deserve your followup attention:

<u>Expert System Name</u>	<u>Purpose</u>	<u>Contact</u>
NERISK	Estimates risk of pesticide to non-target insects but is adaptable to pesticide risk assessment for other non-targets such as birds, fish, and mammals.	Brian Croft Dept. of Entomology Oregon State U. Corvallis, Oregon 97331
INSEX	Makes recommendations for insecticides to use in forest management.	Robert Coulson Dept. of Entomology Texas A&M University College Station, Tx. 77843
TOMYCUS	A diagnostic system for bark beetles in forest management.	Robert Coulson Dept. of Entomology Texas A&M University College Station, Tx.
ISPPEX	Integrated pest management for southern pine beetle.	Robert Coulson Dept. of Entomology Texas A&M University College Station, Tx.
IPS	Diagnoses infestations of pine engraver and recommends control measures.	Sandra Gast USDA Forest Service R-1, P.O. 7669 Missoula, Mt. 59807

Expert Systems (Continued)

SOUTHERN PINE BEETLE	Forecasts infestation of southern pine beetles based on information about the area considered, such as age of forest, occurrence of lightening, etc.	Robert Coulson Dept. of Entomology Texas A&M University College Station, Tx. 77843
HOPPER	Used for pest management of grasshoppers on rangelands.	Bill Kemp USDA-ARS Montana State Univ. Bozeman, Mt. 59717
SILVICULTURE	Helps manager determine proper herbicide in timber stands based on topography, vegetation, climate, water table, EPA requirements, etc.	Gregory Buhyoff Dept. of Forestry Virginia Tech Blacksburg, Va. 24061
GYPSEX	Provides advice on aerial spray operations for gypsy moth suppression.	Michael Saunders Dept. of Entomology Penn State 106 Patterson Bldg. University Park, Pa. 16802
GYPSES	Integrated expert system for gypsy moth control.	Michael Saunders Dept. of Entomology Penn State 106 Patterson Bldg. University Park, Pa.

WSBW RECORD OF DECISION SIGNED

On June 30, James Torrence, Regional Forester for the Pacific Northwest Region (R-6), signed a Record of Decision resulting from his review and analysis of the Final Environmental Impact Statement (FEIS) for "Management of Western Spruce Budworm (WSBW) in Oregon and Washington." His decision is to implement an alternative that provides for direct suppression of WSBW infestations using the biological insecticide Bacillus thuringiensis (Bt) and the conventional chemical insecticide carbaryl. Bt will be the insecticide of choice except where it is not available, where high value stands are at risk to rapidly expanding WSBW populations, or where research is needed on alternatives. Decisions to use Bt or carbaryl in 1990 and beyond will be based on site specific environmental analyses and biological evaluations. For followup

CONTACT: JIM HADFIELD

(503) 294-7448

LAST CHANCE FOR 2,4,5-T DISPOSAL

EPA is making a final plea for holders of 2,4,5-T hazardous waste to inform them so that they can make arrangements for disposal with Cadmus Group, Inc. Forms notifying EPA of the need for disposal are available from WO-Engineering

CONTACT: SUZANNE BUNTROCK

FTS: 235-2262

END

SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS

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VEGETATION MANAGEMENT EIS APPEALS

The recently completed vegetation management environmental impact statements (EISs) for the Pacific Northwest (R-6), the Pacific Southwest (R-5), and the Southern Regions (R-8) have all been appealed in recent weeks. Listed below is a summary of each Regions vegetation management appeal situation:

Region 5 -- Twenty-one appeals have been accepted; 15 include stay requests. Most of the appellants object to the selection of an alternative that allows Forest Service managers the option of using herbicides. Also, most of the appellants ask that a stay be imposed on the application of herbicides during the pendency of their appeal. A decision on the stay requests will be made by June 23. A decision on the merits of the appeals will be made by November 6.

Region 6 -- Twelve appeals were filed expressing concerns similar to those in the Region 5 appeals. Three appellants are expected to withdraw their appeals because of a mediated agreement. The other nine appeals will be reviewed and a decision on their merits is expected by August. A stay on the application of herbicides is in effect until the appeals are resolved.

Region 8 -- Three appeals were filed expressing concerns similar to those in the other Regions. No stays were requested. A decision on the merits of the appeals will be made by November 6.

For followup on any of these appeals contact the WO-FPM appeals coordinator or the contacts for each Region

CONTACT: JOE LEWIS (WO)	FTS 235-1554
MIKE SRAGO (R-5)	FTS 556-5514
MIKE FERRIS (R-6)	FTS 423-7700
STEVE MCCORQUODALE (R-8)	FTS 257-7076

1989 PEST SUPPRESSION UPDATES

Gypsy Moth. Treatments of the gypsy moth were completed June 12 when Maryland completed its part of the 1989 cooperative pest suppression program. In all, 839,459 acres were treated in eradication and suppression programs and in the area of the Appalachian Integrated Pest Management demonstration project. Diflubenzuron (Dimilin) was used to treat 48.3 percent of the acreage while Bacillus thuringiensis (Bt) was used on 51.7 percent of the 1989 treatment acreage. Followup trapping of gypsy moth males is about to begin and will help determine treatment success.

Western Spruce Budworm. A pilot test to evaluate several new formulations of Bacillus thuringiensis (e.g., Foray 64 oz. and 42.7 oz.) will begin, weather permitting, Sunday, June 18, on the Mt. Hood and Wallowa-Whitman National Forests. A site called Pondosa, the geographic center of the 50 United States, is the planned staging area for this pilot project which is expected to involve the treatment of about 7,500 acres.

Douglas-fir tussock moth. Approximately 7,800 acres of the Plumas and Lassen National Forests that are infested with the Douglas-fir tussock moth are scheduled for treatment beginning about June 19.

Forest Tent Caterpillar. A cooperative project to treat a forest tent caterpillar infestation on the Menominee Indian Reservation, Wisconsin was completed May 24. A total of 27,500 acres were treated. Diflubenzuron was used on 25,471 acres and Bacillus thuringiensis was used on 2,029 acres.

Pear Thrips. A pilot study to test the effectiveness of carbaryl (Sevin Brand 4 Oil) in reducing populations of pear thrips on sugar maple in Vermont was completed May 4. Followup evaluations will be conducted in June.

For additional information on any of these projects

CONTACT: MAX OLLIEU OR TOM HOFACKER

(703) 235-1560

NATURAL VS MAN-MADE TOXICANTS

The following comments about natural and man-made toxicants were presented by a representative of the American Council on Science and Health (ACSH) at a recent meeting and are presented here without modification.

"The presumption that 'natural is safe and man-made is suspect' has no scientific support. Substances should be evaluated according to their toxicological properties, not according to whether they are natural or synthetic. Since 'the dose make the poison,' consumption of relatively small amounts of natural or synthetic substances is not a threat to health. We consume naturally-occurring toxic substances, including carcinogens and mutagens, daily but we do not need to worry. Humans have been exposed to all these natural toxic substances and have thrived despite them. Natural toxicants are present in far greater amounts in our food supply than pesticides and other chemical residues, but investigation of the potential contribution of natural carcinogens and mutagens to human cancer has often been ignored in comparison to man-made chemicals in our food supply."

For followup discussions on this issue

CONTACT: DR. ELIZABETH WHELAN (ACSH)

(212) 362-7044

PESTICIDE-USE ADVISORY MEMORANDUMS

In June, the Forest Pest Management staff in the Washington Office prepared three pesticide-use advisory memoranda (PAM) for distribution by the Office of the Deputy Chief, State and Private Forestry. Each PAM is summarized below:

PAM No. 441--A table from the annual "Report of the Forest Service" showing that in 1988 the agency treated approximately 689,607 acres of National Forest System lands with pesticides, including 485,483 acres for insect and disease prevention and suppression, 116,346 acres for vegetation management, and 87,774 acres for animal damage control and other minor-use purposes.

PAM No. 442--A letter prepared by the Office of the General Counsel (OGC) to Chief Robertson discussing Federal employee liability with regard to Federal environmental laws.

PAM No. 443--Copies of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as amended by Public Law 100-532, the 1988 Amendments to FIFRA. Includes an EPA schedule of implementation of the Amendments.

Anyone not already in receipt of these PAMs and wishing to have copies should

CONTACT: LUELLA PENDERGRAPH

DG:L.PENDERGRAPH:W01A

PESTICIDE ACTIVITY REVIEW, R-2

An Activity Review of Region 2 was conducted from May 7-15, 1989. The team leader was Max Ollieu, Assistant Director, FPM/WO, team members included Dennis Murphy, Silvicultural Practices, Timber Management/WO, Jim Free, Range Improvements, Analysis, and Special Programs, R-2, and Dave Johnson, Supervisory Plant Pathologist and Regional Pesticide Coordinator, R-2.

The purpose of the review was to examine the entire scope of pesticide-related activities in the Region. At the conclusion of the review, the team commended the Region for work in six areas: (1) Review itinerary and logistics, (2) pesticide use, handling and storage at Bessey Nursery, (3) noxious weed control, (4) innovation in control of prairie dogs, (5) their IPM efforts, and (6) cooperative efforts in managing a gypsy moth infestation.

The team identified five pesticide-related issues which they believe warrant the Region's attention. These include: (1) Pesticide storage and disposal, (2) NEPA documentation for pesticide-use projects, (3) noxious weed management, (4) IPM expertise, and (5) research and developmental needs in the pesticide area. Situation statements, alternatives and team recommendations were provided to assist in development of an action plan.

Five observations were also noted in the review team's report: (1) Nursery assistance, (2) chemical insecticides for grasshopper control, (3) pesticide newsletter distribution, (4) semiochemical use, and (5) assistance for Colorado State Forest Service.

For followup

CONTACT: MAX OLLIEU (WO)

(703) 235-8209

R-10 PESTICIDE COORDINATOR BEING TRANSFERRED

Andy Eglitis, Forest Service pesticide coordinator in Juneau, Alaska (R-10), has accepted a position in Bend, Oregon and will soon be transferring to that location. As followup, Gene Lessard indicates that the R-10 pesticide coordination responsibilities will temporarily be assigned to Ed Holsten in Anchorage. A workload analysis is underway and an announcement of a decision to fill the position will be made sometime after October 1.

For followup

CONTACT: GENE LESSARD	(907) 271-2575
ED HOLSTEN	DG: E.HOLSTEN:R10FO4A
ANDY EGLITIS	DG: A.EGLITIS:R10A

BIOTECHNOLOGY

New Videotape Available--"Biotechnology: Challenges for Extension" is a new videotape prepared by the Cooperative Extension Service (ES) for county agricultural agents. Available through extension agricultural program leaders and ES communication and information specialists, the videotape includes a discussion of the basics of biotechnology, current applications, as well as an overview of ethical considerations. It is also designed to help people develop plans for dealing with issues related to biotechnology.

APHIS Schedules Biotech Meeting with States--Recognizing the interest by States in biotechnology oversight, the Animal and Plant Health Inspection Service (APHIS) has scheduled a conference, "Federal and State Regulation of Biotechnology: Plants and Micro-organisms," for June 25-28 at Research Triangle Park, North Carolina. Panelists from USDA regulatory and research agencies will discuss issues important to State decisionmakers. For more information

CONTACT: SHIRLEY INGBRITSEN	(301) 436-7602
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NEW HARDWOOD TREE DISEASE

A canker disease called butternut dieback or butternut canker, which is caused by the fungus Sirococcus clavigigenti-juglandacearum, was first described in 1923 but now covers the whole range of butternut in the United States. It moved into the butternut stands of northern Wisconsin within the last 8 years. It is estimated that 80 percent of the butternut have been killed in Virginia and North Carolina in the last 20 years. All remaining butternut are infected and are expected to die within the next 20 years. The fungus also affects the nuts, so that disease-free germ plasm is no longer available through seed from the native range of this tree.

Although no pesticides are known to be effective in the control of butternut dieback, there appears to be some potential for research on resistance since several individual trees show immunity and since butternut will cross with black walnut, which is resistant. Therefore, it is possible that a butternut-black walnut cross followed by back crosses with butternut may produce a tree with most butternut characteristics but immune to this disease.

For followup information on this new hardwood tree disease

CONTACT: BOB ANDERSON (R-8)	(704) 257-4321
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POISONOUS PLANTS OF EASTERN NORTH AMERICA

A new 226-page reference entitled "Poisonous Plants of Eastern North America" has recently been released and may be of interest to pesticide users who are often accused of causing adverse effects from their use of pesticides when in fact poisonous plants are at fault. The reference work contains discussions and color photographs of 150 species of plants arranged by plant family. It also provides notes, without photographs, on 43 additional species. Each of the 150 major species described are presented with a photograph and a monograph covering the following characteristics: description; leaves; fruit/cones/flowers; occurrence; toxicity; symptoms of poisoning, and notes. It is within the subsection called "notes," that the authors have included historical information as well as case histories. The authors have been very careful to precisely cite the literature source of their statements in each monograph which is of great assistance to readers who wish to validate the statements presented. The photographs are colorful and of high quality and offer assistance in easy plant identification. The work concludes with a "ready reference list" which consists of a list of vascular plants known or suspected to cause human poisoning that were found in a search of the current literature. There is also a botanical glossary in the book and a bibliography with 177 citations. It is recommended that this reference work be added to the reference files of persons who may have occasion to be concerned about poisonous plants. To order a copy

CONTACT: R.G. WESTBROOKS
J.W. PREACHER

UNIVERSITY OF SOUTH CAROLINA
COLUMBIA, S.C. 29208

ROUNDUP RESEARCH IN CANADA

At a recent workshop in Nanaimo, British Columbia, Canada, participants discussed research on glyphosate (Roundup) at Carnation Creek, and elsewhere in Canada. A proceedings of the workshop has just been released and includes papers on herbicide use in forest resource management in Canada, fisheries issues, persistence and dissipation of glyphosate in Canadian coastal watersheds and soils, glyphosate effects on aquatic invertebrates, effects of forestry use of glyphosate on human health, and risk communication.

Although the workshop proceedings are specific to research conducted in Canada, many of the research findings and conclusions are applicable to glyphosate use in the United States. At a minimum, information in the "Proceedings of the Carnation Creek Herbicide Workshop" (Report 063) should be referenced in future herbicide assessments or proposals to use glyphosate for forest management in the U.S.

Copies of the proceedings have been requested from Canada for distribution to each Region. For followup

CONTACT: LARRY GROSS

(703) 235-8209

MORE CANADIAN PESTICIDE RESEARCH

A Pesticides Issues Team of Environment Canada's Atlantic Region recently released a report on the "Environmental Effects of Fenitrothion Use in Forestry--Impacts on Insect Pollinators, Songbirds, and Aquatic Organisms." Fenitrothion has been used in forest protection in eastern Canada since 1965; however, through this period of use there has been a developing perception that the insecticide causes impacts that should be questioned, particularly in light of society's increased concern for environmental health. Concerns about fenitrothion prompted a decision to review the spraying of this insecticide in Canadian forests. The present report summarizes the results of the review and concludes with the following recommendations from the Pesticide Issues team:

Because the accumulated evidence indicates that the present forestry use of fenitrothion causes negative effects on some non-target fauna and on ecological processes of concern to the Pesticides Issues Team, it is judged that large-scale spraying of fenitrothion at registered dosage rates is environmentally undesirable and recommended that an early re-evaluation of the registered fenitrothion use pattern be undertaken.

Because small lentic systems are sensitive to fenitrothion contamination, it is recommended that increased protection be provided for such water bodies by the establishment of appropriate no-spray buffer zones.

Because fenitrothion is detrimental to pollination of entomophilous plants, a vital ecological process, it is recommended that further insect pollinator studies be undertaken. Emphasis should be placed on: sublethal effects, which may in aggregate be more environmentally disruptive than lethal ones; the relationship between pollinator abundance and the reproductive success of forest flora, particularly the rarer obligate insect-pollinated plants; and the consequences of reduced production of seed and fruit for forest wildlife dependent on those food resources.

Because the biological significance of avian cholinesterase inhibition is not completely understood, it is recommended that information gaps be filled with regard to both brain and blood cholinesterase inhibition and in particular the effect on the reproduction of bird indicator species in various fenitrothion-sprayed forest habitats.

Because fenitrothion spraying for forest protection takes place at a time crucial for the survival of certain wildlife dependent on an aquatic invertebrate food resource, it is recommended that the implications of aquatic invertebrate depletions in small bodies of water for such animals be investigated.

Because no clear relationships have been established among fenitrothion spray technology, spray dosage rate, localized insecticide deposit, and exposure pathways in non-target fauna, it is recommended that those elements be factored out in controlled environment experiments so that their relative importance to biological impacts may be determined.

For a copy of this report

CONTACT: COMMUNICATION SERVICES
FIFTEENTH FLOOR, QUEEN SQUARE
DARTMOUTH, NOVA SCOTIA

ENVIRONMENT CANADA
45 ALDERNERY DRIVE
B2Y 2N6

PROTECTION SPRAYING AGAINST SPRUCE BUDWORM IN CANADA

In spite of the recommendations against future uses of fenitrothion in eastern Canada, as presented in the summary of the report discussed above, this insecticide is still in use as indicated by a copy of a recently-received report entitled "Protection Spraying Against Spruce Budworm in New Brunswick." This report, published by the Forest Pest Management Section, Department of Natural Resources and Energy, indicates that in 1988, Forest Protection Limited applied both the chemical insecticide fenitrothion (Sumithion) and the biological insecticide (*Bacillus thuringiensis*) (Bt) to spruce budworm (*Choristoneura fumiferana*) populations in New Brunswick. The objective of the control efforts was to limit budworm defoliation of balsam fir (*Abies balsamea*) and red-black spruce (*Picea rubens*-*P. mariana*). Although Bt provided some protection, results were far superior with fenitrothion. Budworm mortality due to fenitrothion averaged 72 percent compared to 50 percent for Bt. Branch defoliation in fenitrothion treatment areas averaged only 34 percent, but was 68 percent in Bt plots.

For a copy of the full report

CONTACT: NELSON CARTER
DIRECTOR, FPM
TIMBER MANAGEMENT

P.O. BOX 6000
FREDERICTON, N.B.
E3B 5H1 CANADA

EPA ISSUING REVISED ENDANGERED SPECIES PROTECTION PROPOSAL

EPA's revised endangered species protection proposal is scheduled to be issued soon. Upon printing in the *Federal Register*, interested persons will have 90 days to provide comments which are especially solicited on the new generic labeling concept that replaces the previously proposed county-specific labeling approach. EPA officials were quoted in a recent issue of *Pesticide and Toxic Chemical News* as saying of the new proposal:

"The major disadvantage of generic labeling is that users of affected products in all counties would have to become aware of whether any use limitations to protect listed species existed in their county. Because the Bulletins containing the use limitations may change as often as annually, pesticide users would have to determine if there are any changes each year. The EPA is concerned that users in initially unaffected counties may become apathetic to future limitations in those counties and cease checking to determine whether they are subject to use limitations if they have checked for several years and found none. User opposition to the program may result, which could lead to decreased user compliance. With county-specific labeling, the existence of use limitations in a particular county would be clear as a result of listing the counties on the label."

Several other provisions of the proposed, revised plan are summarized below:

EPA enforcement of the imposed use limitations will be done under the misuse and misbranding sections of FIFRA. Misbranded products may be subject to cancellation. The USDI's Fish and Wildlife Service will also enforce under the Endangered Species Act.

A species-based approach replaces the previously-proposed cluster approach to biological consultation.

The highest labeled application rate will be used as a screen only. If the screening step indicates a "may affect" situation, the pesticide will be evaluated further to determine the threshold or lowest application rate that "may affect" listed species.... Consultation with FWS will be limited only to the specific application rates and uses that "may affect" listed species.

Threshold application rates will be used for acute and chronic effects if EPA has sufficient information.

EPA will assess the economic impact of the program on pesticide users and try to reduce the burden. The analysis will consist of case studies. In addition, the proposed plan will also quantify the cost to society by estimating the impacts to pesticide registrants and pesticide users regarding implementation of the generic versus county-specific labeling approach and also will qualitatively examine the effectiveness of these approaches.

The revised plan is replete with EPA public notice requirements and opportunities for public input and comment.

The most vulnerable endangered species will be protected first.

In 1990, there will be a voluntary interim program. The enforceable measures will take effect in January, 1991. This will be done through the issuance of PR Notices to registrants of affected pesticide products.

All indoor uses of pesticide products are exempt from the proposed requirements.

Of its new proposal EPA says that it has two primary objectives: (1) Providing the best protection for listed species, and (2) being responsive to the needs of agricultural production in this country by developing a program that can be readily implemented without unnecessary burden on pesticide users.

According to EPA, the second objective will be achieved through the use of the threshold application rate approach, refined maps and consideration of different methods of application. Application rates below the threshold application rate will not be part of the consultation request according to the revised proposal. For example,

Once the threshold application rate for a pesticide is established, EPA will determine if any known measures could alter the "may affect" determination or reduce exposure. This information will be given to FWS when EPA requests consultation or reinitiates consultation on existing opinions. If the threshold application rate is lower than any registered application rates, EPA will conclude that all of the registered application rates will result in a "may affect" determination.

For additional information on FS intent to comply with EPA's revised plan

CONTACT: SHELLY WITT

(703) 235-8209

END

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GYPSY MOTH TREATMENT UPDATE

As of May 26, gypsy moth treatments are 79% complete. 669,056 acres have been treated in both cooperative suppression and eradication efforts. Projects are 100 % complete in Delaware and Virginia. Gypsy moth eradication efforts, using three applications of Bacillus thuringiensis (Bt), on the Wasatch-Cache NF in Utah are complete.

Several pesticide incidents have occurred during this year's treatments. Two fatalities resulted from a helicopter crash near Cumberland, Maryland. Killed were Coloney Helicopter pilot Joel Knight and Maryland Department of Agriculture employee Anne Wieber. The Bell 204 helicopter had been spraying Bt when it hit a power line stringer cable.

For daily suppression report updates

CONTACT: TOM HOFACKER

(703) 235-1560

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

U.S. DISTRICT COURT LIFTS FOREST SERVICE HERBICIDE BAN

On May 24, the U.S. District Court in Portland lifted the 1984 court injunction that banned the USDA Forest Service from using herbicides in their vegetation management programs on National Forests in Oregon and Washington. A joint motion to dissolve the herbicide injunction and dismiss the complaint was presented to Judge James M. Burns after parties to the lawsuit reached a successful mediated agreement over outstanding issues with the agency's Final Environmental Impact Statement for vegetation management.

The mediated agreement brings successful closure to a long-standing dispute over the use of herbicides on National Forest lands in the Pacific Northwest. "We are pleased at the success of mediating an agreement with the parties involved in the injunction," said Regional Forester James F. Torrence. "We appreciate the intensive effort made by everyone in reaching this agreement over how we will implement the environmental impact statement."

Principal participants in the dispute included Paul Merrell; Northwest Coalition for Alternatives to Pesticides (NCAP); Oregonians for Food and Shelter (OFS); and the Forest Service. The parties have been engaged in mediation since March. The mediation process was conducted by three independent mediators--Elaine Hallmark, founding partner of Confluence, a law firm specializing in dispute resolution; Bryan Johnston, Director of the Center for Dispute Resolution, Willamette University College of Law; and Sid Lezak, counsel with Portland law firm of Newcomb, Sabin, et al. In addition, legal counsel for NCAP was provided by Ralph Bradley of Bradley and Gordon. John DiLorenzo of O'Connell and Goyak represented OFS. Success was achieved when all parties jointly petitioned the court to dismiss its 1984 injunction.

Issues mediated by all parties revolved around joint expectations of how the Forest Service will implement its vegetation management program. In addition, other issues included the kinds of information the agency will provide to the public and employees about vegetation management methods and their principal environmental and human health risks, and the process for developing and incorporating new information about vegetation management methods, their usefulness, and effects.

The Final Environmental Impact Statement for "Managing Competing and Unwanted Vegetation" was prepared in an effort to complete a worst case analysis and a comprehensive human health risk assessment for the vegetation management program. Herbicides, along with mechanical, manual, burning, and biological methods are used to treat unwanted and competing vegetation in many land management activities such as controlling vegetation that competes with young conifer seedlings, clearing away roadside brush, controlling vegetation in and around research sites, and eliminating noxious weeds.

Lifting of the injunction allows the Forest Service to consider using herbicides as a tool in treating unwanted and competing vegetation on the National Forests in Oregon and Washington. The final selected alternative in the Environmental Impact Statement allows for all vegetation management tools to be available, but emphasizes prevention of vegetation management problems, and herbicide use only when necessary.

CONTACT: DAVE CARAHER

(503) 326-7700

SUPREME COURT RULES ON WORST CASE ANALYSIS ISSUE

On May 1, the U.S. Supreme Court unanimously reversed and remanded for further proceedings a decision by the Ninth Circuit Court of Appeals. Although the case (Robertson v. Methow Valley Citizens Council) did not involve the use of pesticides, it affirmed the Forest Service position on the description of mitigation measures and the requirement for worst case analyses in environmental impact statements--two issues quite relevant to pesticide-use management and coordination.

The case involved a decision to issue a recreation special-use permit for a proposed ski area on the Okanogan National Forest, Washington. Because the decision was deemed to be a "major Federal action" within the meaning of the National Environmental Policy Act (NEPA) an environmental impact statement (EIS) was prepared according to Council on Environmental Quality regulations. The EIS and its Record of Decision were appealed and subsequently litigated by appellants who believed that NEPA had not been complied with since mitigation measures had not been fully described and a worst case analysis had not been performed.

The District Court concluded that the EIS was adequate, but the Court of Appeals reversed the decision, which was then elevated to the High Court. The Court of Appeals had concluded that the EIS was inadequate because it did not include a detailed explanation of specific actions to be taken by the FS to mitigate adverse impacts; and that since the FS had difficulty obtaining adequate information to make a reasoned assessment of the project's environmental impact, it had an obligation to do a worst case analysis.

The Supreme Court; however, ruled that:

1. "NEPA does not impose a substantive duty on agencies to mitigate adverse environmental effects or to include in each EIS a fully developed mitigation plan."
2. "NEPA does not impose a duty on an agency to make a "worst case analysis" in its EIS if it cannot make a reasoned assessment of a proposed project's environmental impact."

This affirms the FS position that mitigation measures be discussed only in sufficient detail to fairly evaluate environmental consequences. It also indicates that the "new" (1986) regulation (40 CFR 1502.22) be followed when evaluating effects when there is incomplete or unavailable information.

For further information

CONTACT: DAVE KETCHAM

(202) 447-4708

CONTROL OF INSECTS BY FUNGAL MYCOTOXINS

USDA researchers P.F. Dowd, R.J. Cole, and R.F. Vesonder have determined that tremorgenic mycotoxins produced by fungi have potent insecticidal and growth inhibitory activity against certain pests. Information on U.S. and possibly foreign licensing is available (\$13.95--No. PB 88 245 840)

CONTACT: NATIONAL TECHNICAL INFORMATION SERVICE

(703) 487-4600

TWO FIRMS SELECTED TO DO TOXICOLOGY TESTING FOR FOREST SERVICE

Microbiological Associates of Rockville, Maryland and Toxikon Corporation of Woburn, Massachusetts were recently selected to conduct a battery of toxicological tests on the Forest Service-registered Douglas-fir tussock moth virus (TM Biocontrol-1).

Although previously registered with the U.S. Environmental Protection Agency, the virus was not allowed to be used in California this year because of the California Department of Food and Agriculture's (CDFA) requirements for additional toxicology testing. Therefore, in February the Forest Service began identifying firms that would be in a position to conduct the necessary CDFA-required tests and in May, Microbiological Associates and Toxikon were selected. Microbiological Associates will conduct the following studies: acute inhalation toxicity, acute dermal toxicity, primary eye irritation, and chromosome aberration tests. Toxikon will conduct three tests: acute oral toxicity, acute intravenous toxicity, and primary dermal irritation.

The data from these studies will be submitted to CDFA, with copies to EPA, for evaluation and possible registration in California in 1990. For additional information on the toxicology testing being done

CONTACT: ZDENKA HORAKOVA

(703) 235-8209

PESTICIDE ADVISORY MEMORANDA ON EPA HEALTH ADVISORIES

Pesticide-Use Advisory Memorandum (PAM) No. 439 was distributed April 20, and included 21, multiple-page Health Advisories that were prepared by the Environmental Protection Agency's (EPA) Office of Drinking Water. The same office followed up the issuance of the Health Advisories with a set of 56 Health Advisory Summaries. These are being distributed via Pesticide Advisory Memorandum No. 440.

The Health Advisory Summaries are one-page synopses of the possible human health effects associated with commonly used pesticides that may find their way into drinking water wells.

The EPA prepared the Summaries for the National Survey of Pesticides in Drinking Water Wells, a project designed to assess the extent and severity of pesticide contamination of the Nation's drinking water wells. The Survey includes sampling of 1,350 wells--some in every State--for pesticides with the potential to contaminate groundwater and subsequently reach drinking water supplies.

In addition to the one-page Health Advisory Summaries PAM No. 440 includes a table of the 56 pesticides, their possible effects on human health, and EPA's guidelines for "safe" exposure. This information should be shared with persons who have concerns about pesticide contamination of drinking water. Followup questions should be directed to EPA's

CONTACT: SAFE DRINKING WATER HOTLINE

1-800-426-4791

TECHNOLOGY TRANSFERS

The USDA Forest Service recently signed agreements with two firms to facilitate the transfer of technology from the Federal government to the private sector. Under the provisions of the Stevenson-Wydler Technology Transfer Act of 1986 (15 U.S.C. 3710a) the Forest Service signed a technology transfer (TT) agreement with Scentry, Incorporated to use FS research data to pursue the registration of the Douglas-fir tussock moth pheromone. The agency also signed a Memorandum of Understanding with Continuum Dynamics, Incorporated which spells out their responsibilities to assist in transferring technology developed as a result of work done on two computer models that help users plan for aerial applications of pesticides.

Scentry, Inc. of Phoenix, Arizona is a pheromone marketing business that has been cooperating with research scientists at the Forest Service's Pacific Northwest Research Station. In May, the FS and Scentry agreed to an effort to pool resources to evaluate private sector capabilities to register with EPA and commercially produce and distribute the hollow fiber pheromone called **NoMate DFTM**.

For additional information about Scentry or the TT agreement

CONTACT: GARY DATERMAN (503) 757-4331

Continuum Dynamics, Inc. (CDI) of Princeton, New Jersey has for several years been a cooperator with the USDA Forest Service in the development of the two aerial pesticide application models--AGDISP and FSCBG. The current Memorandum of Understanding (MOU) establishes a process whereby CDI will serve as a user-group caretaker for the two models. CDI will provide advice and assistance in the proper generation of inputs and interpretation of results from the models to ensure that technology developed by the FS and its cooperators is transferred as correctly and as timely as possible.

For additional information on the CDI Memorandum of Understanding

CONTACT: JACK BARRY (916) 758-4600

TERMITE HOME AND GARDEN BULLETIN REVISED

USDA Home and Garden Bulletin 64 entitled "Subterranean Termites--Their Prevention and Control in Buildings" was recently revised. Forest Service authors Ray Beal, Joe Mauldin, and Susan Jones, working with Washington Office editorial and pesticide coordination personnel, updated the popular publication, which had also been revised in 1983 and 1986.

Although the basic biological information about termites remains the same, prevention and direct control methods sections were updated to reflect new pesticides and new application techniques.

For copies of this 36-page brochure

CONTACT: TOM HOFACKER (703) 235-8209

NEBRASKA NATIONAL FOREST SUPPORTS NOXIOUS WEED CONTROL

The Forest Supervisor of the Nebraska National Forest recently signed a Memorandum of Understanding (MOU) with the Animal and Plant Health Inspection Service (APHIS) for the purpose of cooperatively establishing and maintaining a field biological insectary for the propagation of biological control agents for the control of noxious weeds. The insectary will be located on the Pine Ridge Ranger District and will be operated by APHIS Plant Protection and Quarantine personnel. The insectary will facilitate the propagation and dissemination of biocontrol agents for control of noxious weeds within the boundaries of the Nebraska National Forest. To prevent untoward effects of pesticides on developing biocontrol agents at the insectary, no insecticide or herbicide use will be allowed at the site.

If you wish additional information about this cooperative effort

CONTACT: LARRY R. MILLER (FS) (308) 432-4475

PURDUE PRODUCES PAWPAW PESTICIDE

Researchers at Purdue University in cooperation with USDA Agricultural Research Service scientists have determined that a natural pesticide may be produced from the bark of the pawpaw tree (Asimina triloba; Anonaceae). In preliminary tests, extracts from the bark of this small eastern tree have effectively controlled a variety of pests including Mexican bean beetle, aphids, cucumber beetles, spider mites, blow flies, and cabbage loopers. Further testing on other pests and ways to improve bark yield are underway. If interested

CONTACT: PURDUE UNIVERSITY (317) 494-4562

STRYCHNINE LABEL CHANGES IMMINENT

In March, the Forest Service requested that the Animal and Plant Health Inspection Service (APHIS) consider a change to the strychnine labels they have responsibility for under their Animal Damage Control program. The request was to have additional species added to the label by grouping pocket gopher species according to genera and having the label indicate "For Use Against Geomys, Thomomys, and Pappogeomys species." The APHIS registration coordinator reminded the FS that EPA no longer allows identifications of species controlled by generic classification; however, they did agree to request a label change that would allow strychnine use in burrow builders (Registration Nos. 56228-11 and -12) on the following additional species: mountain pocket gopher (Thomomys monticola), Townsend's pocket gopher (T. townsendii), Botta pocket gopher (T. bottae), and Camas pocket gopher (T. bulbivorous). The request was sent to EPA May 2, a response is expected soon.

These additions should cover all of the major pocket gopher species requiring control according to the most liberal classification system.

For more information on the status of the strychnine labels

CONTACT: EDWARD SCHAFER, JR. (APHIS) FTS 776-4263

PURDUE SPONSORS HERBICIDE ACTION WORKSHOPS

Purdue University is again sponsoring two workshops on the activity, selectivity, behavior, and fate of herbicides in plants and soils. The sessions, which will be held November 5-10 and November 12-17, will continue Purdue's efforts to provide a good understanding of herbicide action. The workshops promise to be of value to those working with agricultural chemicals, in research, development and technical service, to crop consultants, and to individuals in the public sector involved in weed control.

The course will be taught in very intensive five-day sessions. They will consist of lectures, demonstrations, and discussions. Subjects to be included are: Principles of selective weed control, penetration of foliar-applied herbicides, translocation, uptake from soils, herbicide bioassays, classification of herbicides by type of action, mode of action of herbicides, antidotes, resistance, timing of applications, integrated pest management, and herbicide behavior. Also to be discussed are groundwater, trends in herbicide application, safety, legislation, and new ideas for weed control.

Instructors for the course include G.F.(Fred) Warren, F.D.(Dan) Hess, J.R. Abernathy, F.W. Slife, A.P. Appleby, J.H. Dawson, S. Weller, J.L.(Jim) Ahlrichs, G.E. Ruhl, D.I. Leap, and Harvey Holt. For registration information

CONTACT: G.F. WARREN (PURDUE) (317) 463-1130

AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS SUPPORT AGDISP

The American Society of Agricultural Engineers have supported the Agricultural DISPersion (AGDISP) computer model in their January-February, 1989 **Transactions** (Vol. 32, No. 1, pp. 327-334). This is an important milestone in the 4-year cooperative effort between the Forest Service and the Department of Defense's Atmospheric Sciences Laboratory to develop a computer code that predicts the deposition of materials (e.g., pesticides) released from aircraft. In the article the features of AGDISP are reviewed and its predictive capability is assessed by comparison with recent test data. For a copy of the ASAE article

CONTACT: JACK BARRY (916) 758-4600
BOB EKBLAD (406) 329-3900

CHEMLAWN CONVERSION

According to a **Wall Street Journal** report, ChemLawn, a national lawn care firm, has joined forces with Ecogen, Inc. to convert their pesticide product line from conventional chemical pesticides to biopesticides. Under the terms of the ChemLawn/Ecogen agreement, ChemLawn plans to use more Bacillus thuringiensis-based pesticides in the future and they will rely on Ecogen to select from their inventory of over 7,000 strains of Bt to do the job. The reason for ChemLawn's conversion is the increased sensitivity of homeowners to chemical pesticides. For followup information

CONTACT: MANCER CYR (ECOGEN) (215) 757-1590

DEER TICK AND DISEASE CONTROL WITH DAMMINIX

EcoHealth, Inc. says its new product, Damminix, has proven to be more than 97 percent effective in reducing the number of Lyme disease-infected deer ticks on treated properties. The product could be a major weapon in the battle against Lyme disease, which is carried by ticks.

According to EcoHealth, the findings were based on tests conducted in 1988 by the Connecticut Parks Department, the Nature Conservancy on Shelter Island, the Trustees of Reservation in Ipswich, Massachusetts, and the New York State Departments of Health and Parks and Recreation.

The tests show that Damminix can play a major role in controlling this serious public health problem. Developed by three scientists from Harvard's School of Public Health, Damminix works by focusing on the tick, Ixodes dammini, which feed on the white-footed mouse, which carries the disease.

The Damminix product consists of biodegradable cardboard tubes filled with cotton balls soaked in the insecticide permethrin. The tubes are placed in a grid pattern in the affected areas in the spring and late summer. Mice gather the cotton balls and take them to their nests where the treated cotton kills the ticks without harming the mice.

Damminix is registered with the U.S. Environmental Protection Agency and in 12 States where Lyme disease is a problem. For followup

CONTACT: ALEXANDER KOVEL (ECOHEALTH) (617) 742-2400

EPA APPROVES NEW USDA-RESEARCHED FIRE ANT PESTICIDE

Sulfluramid, a pesticide developed by the USDA Agricultural Research Service, was recently registered for use against fire ants and cockroaches by the U.S. Environmental Protection Agency (EPA). The USDA granted an exclusive license to Griffen Corporation to register the new pesticide that in preliminary tests has also been shown to be effective in treating Formosan termites--a recently introduced pest to the U.S.

Fire ants (See "Short Subjects..." Issue No. 89-8, p.4) annually cause impacts of up to \$200 million as measured in terms of medical costs and agricultural losses; however, this new pesticide, which reportedly kills 90 percent of treated colonies, may spell relief.

For additional information on sulfluramid, which was developed at the USDA Imported Fire Ant and Household Insects Research Laboratory in Gainesville, Florida

CONTACT: CLIFFORD S. LOFGREN (904) 947-7920

NEW FACT SHEETS

Two new Chemical Fact Sheets covering the insecticides cypermethrin and bendiocarb were recently made available by EPA through the National Pesticide Information Retrieval System (NPIRS). Copies of the NPIRS printouts are available from WO-FPM

CONTACT: LUELLA PENDERGRAPH

DG: L.PENDERGRAPH:W01A

GROUP LEADER FOR PLANNING POSITION FILLED IN R-6

Ms. Fay Shon, former Forest Service employee in Regions 5 and 6, was recently selected to fill the Group Leader for Planning position on the Forest Pest Management staff in the Pacific Northwest Region (R-6), Portland, Oregon.

Fay was formerly a pesticide coordinator with the agency but for the past several years she has been doing environmental coordination work for the Bonneville Power Administration. Part of Fay's new responsibilities will include implementation of the mediated agreement for vegetation management in R-6. (See page 2 of this issue for details of this agreement). Fay will be supervised by Bill Ciesla, staff director for FPM in R-6. For followup

CONTACT: BILL CIESLA

(503) 294-7448

USDA INSECT RESEARCH NOTES

Herbert Oberlander of the Insect Attractants, Behavior, and Basic Biology Research Laboratory in Gainesville, Florida has made insect cells transform into the full body parts that a live insect would have made, by adding ecdysone to the cell culture. Once perfected, this technique could allow scientists to test potential pest control materials (e.g., pesticides) on living insect tissue without interference from an insect's other functions.

Oberlander and a colleague, Dwight Lynn, have been working with wing cell and other cell lines of pests. They believe that their work could lead to the use of cell lines for studying and growing insect viruses. For example, Lynn has grown cell lines for the gypsy moth and believes that the viruses can be grown using cell lines rather than the currently used process of using whole insects, -- the current process used by the FS and others to prepare the gypsy moth nucleopolyhedrosis virus registered by the FS as GYPCHEK.

For followup on the research at the Insect Attractants, Behavior, and Basic Biology lab

CONTACT: HERBERT OBERLANDER

(904) 374-5700

ALAR EDITORIAL

According to the following editorial that appeared in the May 17, **Washington Times**, the Alar scare has turned sane people zany. Panicky moms have asked if it's "safer to pour apple juice down the drain or take it to a toxic-waste dump." the Processed Apple Institute, representing apple sauce and apple juice makers, called on the Environmental Protection Agency to ban Alar--not for health reasons, but because profits are down 20 percent. The EPA will soon ban Alar, even though it will cost Stayman and McIntosh apple growers as much as \$81 million. Steamrolled by this juggernaut, the apple industry has decided to stop using it. Yet no-one has proved that eating apples treated with Alar causes cancer.

The scare was precipitated by a report from a left-wing advocacy group known as the Natural Resources Defense Council (NRDC). NRDC concluded that apples treated with Alar pose an "intolerable risk" to children because certain compounds used to make it caused cancer in laboratory mice. NRDC, whose "scientific" projects include calling for a ban on plutonium production, twisted the data to show that the Nation's children are in mortal danger because they consume a lot of apple juice. CBS' **60 Minutes** aired two reports on the subject. The second was less alarmist than the first, but still implied that apples kill.

True, an ingredient in Alar has been linked to cancer in mice, but only at impossible levels of consumption. You'd have to eat 28,000 pounds of Alar-treated apples or drink 500 gallons of Alar-tainted apple juice every day for 70 years to approach the exposure levels of the mice. As carcinogens go, Alar is as much as 16,000 times less "carcinogenic" than one sleeping pill, 2,800 times "safer" than a bottle of beer, 100 times safer than a gram of dried basil, 30 times safer than a peanut butter sandwich. CBS didn't tell us that.

Dr. Elizabeth Whelan of the American Council on Science and Health rightly warns that "the basic assumption is that we should ban any chemical that causes cancer in animals, no matter how minute the exposure to humans," a move that would wreak economic havoc and devastate our food supplies. According to **Nature** magazine, 65 percent of 800 chemicals tested on rodents proved to be "carcinogens," so banning all "carcinogenic chemicals" would mean exposing a significant portion of our food supply to pests and diseases wiped out long ago.

Mortality rates for all cancers, except smoking-induced lung cancer and sun-induced skin cancer, have dropped over the past 25 years, even though the use of pesticides and chemicals in our food supply has increased. Significantly, EPA didn't ban Alar because it "may result in an unacceptable risk to public health." If you're going to live by that criterion, you might as well not get out of bed in the morning. In banning Alar, the EPA is setting a precedent for outlawing anything about which ideologues can produce a scare. That isn't science or environmentalism. It's terrorism.

DR. ELIZABETH WHELAN (ACSH)

(212) 362-7044

END

SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS

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GYPSY MOTH SUPPRESSION EFFORTS UNDERWAY

The 1989 program to control gypsy moth in the eastern United States began April 28 when 8,523 acres were treated in an eradication effort in Hartford-Gates County, North Carolina. Both Bacillus thuringiensis and diflubenzuron were used in this effort. Other suppression efforts have begun in Delaware, New Jersey, Virginia, Maryland, Pennsylvania and the District of Columbia. At press time 173,296 acres or 24 percent of the 1989 control program goal (699,753 acres) had been completed.

A daily record of treatment acreages is maintained by the Forest Pest Management staff.

For up-to-date information

CONTACT: TOM HOFACKER

(703) 235-1560

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

MANUAL ON GROUND APPLICATIONS OF FORESTRY HERBICIDES

The USDA Forest Service in cooperation with Auburn University's School of Forestry recently distributed a publication entitled "A Manual on Ground Applications of Forestry Herbicides." Edited by James H. Miller, Southern Forest Experiment Station, and Robert J. Mitchell, Auburn University, the publication is in a 3-ring binder and covers topics such as: Herbicide terms and concepts, handcrew application, methods for woody plant control, herbicide applications with ground machines, herbaceous weed control in young pine plantations, granular and pelleted herbicide applications, guidelines for kudzu eradication, forest herbicide safety, and applicator exposure. Also discussed in the publication are business aspects of an herbicide applicator enterprise, laws and regulations, and the economics of competition control in loblolly pine plantations. A final feature of the publication is the inclusion of product labels and material safety data sheets for the herbicides most commonly used in the management of forests in the South.

This publication provides current information on the safe and effective treatment procedures for handcrew and machine applications of forestry herbicides. Although written primarily for use in the Southern Region (R-8), many of the concepts apply nationwide and if interest warrants, an expanded version may be developed to cover other vegetation types and application procedures.

For a copy of "A Manual on Ground Applications of Forestry Herbicides," request Management Bulletin R-8-MB 21

CONTACT: USDA FOREST SERVICE
SOUTHERN REGION (R-8)
1720 PEACHTREE RD., NW
ATLANTA, GEORGIA 30367-9102

ENVIRONMENTAL HEALTH ENGINEERING WORKSHOP SCHEDULED

Environmental engineers from across the United States plan to meet in Butte, Montana June 5-9 to attend the biannual USDA Forest Service Environmental Health Engineering Workshop.

Although Butte will be the main point of arrival, the workshop will actually be held at Fairmont Hot Springs near Anaconda. Several special events in and around Butte, Anaconda, and the Fairmont Hot Springs are planned in conjunction with the workshop.

Washington Office environmental engineers Suzanne Buntrock and Bill Opfer have developed an all-encompassing agenda with topics ranging from hazardous waste handling and disposal, drinking water regulations, CERCLA, SARA, wood preservatives, indoor air pollution, radon, asbestos, to Federal employee liability.

Anyone interested in attending the workshop is asked to

CONTACT: SUZANNE BUNTROCK (WO)	(703) 235-2262
DARRELL MCNENNY (R-1)	(406) 329-3307

AGDISP TRAINING SESSIONS HELD

Two four-day training sessions on the use of the pesticide model AGDISP were recently held in Missoula, Montana. Using eight Data General terminals in the Regional Office, 14 participants from the Forest Service, academia, and industry, were given hands-on instruction on AGDISP, which is a scientific computer program that predicts how aircraft-unique wake and propulsion characteristics affect the ground deposition of aerially-released materials (e.g., pesticides).

Participants in the session used previously established sample cases and real life examples from their own experiences to practice the production of AGDISP graphic outputs. At the end of the sessions, suggestions were made on how AGDISP could be improved (e.g., adding all aircraft described in the Aerial Application Handbook to the casefile input without users having to enter detailed aircraft information). This and other suggested changes have been made by the Forest Service and its contractor, Continuum Dynamics, Inc.

The next training on AGDISP will be in December when a presentation is planned to be made at the winter American Society of Agricultural Engineers/National Agricultural Aviation Association meeting.

For followup

CONTACT: BOB EKBLAD

(406) 329-3900

PACIFIC SOUTHWEST REGION HOLDS PESTICIDE TRAINING

The Pacific Southwest Region (R-5) recently completed their 1989 Pesticide Training Program. Since this was the first training offered by the Forest Service in the Region since the 1984 ban on the use of herbicides, three classroom sessions were held in order to meet the demand: March 13-17 in Placerville, April 10-14 in Sonora, and April 24-28 in Redding. Two field exercises were held at Growers Air Service in Woodland the week of May 8 where the students received hands-on experience with aircraft calibration and characterization as well as experience with ground and hand application methods. Over 225 students took the training. Because of Regional Forester Paul Barker's concern about safe use of pesticides, this training was mandatory for all employees who plan for or work with pesticides.

This training was patterned after the Advanced Pesticide Management Training Course given at Marana, Arizona in that it concentrated on planning, preparing, and implementing pesticide-use projects. Instructors included University of California (Davis), California Department of Food and Agriculture, California Department of Health, Pacific Southwest Forest and Range Experiment Station, industry representatives, and Forest Service employees who had previously received the Marana training

Industry participation was vital since they along with research provided valuable information on what products and application techniques work best on the varied vegetation pests that occur in California.

For followup

CONTACT: DAVE THOMAS
JOHN NEISESS

(916) 622-5061
(415) 556-9087

INVINCIBLE IMPORTS

As reported in the May 8 issue of *Insight* magazine, Solenopsis invicta, the imported fire ant has successfully infested portions of 11 southern States and Puerto Rico. The fire ant actually consists of two varieties--the black imported fire ant and the red imported fire ant. Each launched separate invasions of the U.S. from South America (Brazil and Argentina)--the black in 1918, the red in the 1930's. Hitchhiking in nursery stock and other transported commodities, the fire ants quickly established spot infestations in Alabama and other southern States. Today the ants occur in North Carolina, South Carolina, Georgia, Florida, Alabama, Louisiana, Texas, Tennessee, Oklahoma, and Arkansas and entomologists expect the ants to enter California, Oregon, and Washington in time.

Damages caused by fire ants include stinging of landowners and their animals, attacks on wildlife, creation of mounds that disrupt vehicle movement, and destruction of planted vegetation (e.g., in croplands, nurseries, and reforestation areas).

Pesticidal control of fire ants has been less than successful. During the 1950's and 1960's the Federal government sponsored eradication efforts on millions of acres with pesticides like Mirex. Landowners too have tried control with everything from potent pesticides to boiling water, with little success.

A new effort aimed at control of these invincible imports is to use biological control. For example, in the April 19 issue of the *Federal Register* (Vol. 54, No. 74, p. 15804) it was announced that Evans Biocontrol of Broomfield, Colorado was requesting EPA permission to conduct small-scale field testing of a non-indigenous Brazilian isolate of the fungus Beauveria bassiana. If the tests are approved and the material is successful, a new biorational pesticide may be in the making. For additional information on the fire ant and/or the fungus

CONTACT: EVANS BIOCONTROL

(303) 460-1780

DOUGLAS-FIR SEED ORCHARD DECISION MODEL DEVELOPED

Researchers at the Pacific Southwest Forest and Range Experiment Station recently developed a computer program that provides Douglas-fir seed orchard managers (users) with a quantitative method for making insect pest management decisions on a desk-top computer. The decision system uses site-specific information such as estimates of seed crop size, insect attack rates, insecticide efficacy and application costs, weather, and crop value. At sites where information on insect attack is not available, regional attack rates within the program may be used. The heart of the decision system is a payoff analysis. It evaluates alternative management actions and identifies the best action under the best or worst conditions, and the action that minimizes the opportunity cost. Tutorial help is included in the program as well as utility programs for entering local weather data.

For a copy of this 30-page publication (General Technical Report PSW-108)

CONTACT: PACIFIC SOUTHWEST
FOREST AND RANGE EXPERIMENT
STATION

P.O. BOX 245
BERKELEY, CALIFORNIA
94701

DIAZINON FACT SHEET

The U.S. Environmental Protection Agency (EPA) recently completed their review of products containing the active ingredient diazinon. As a result, they issued a new Fact Sheet (No. 96.1) that replaces the version published in 1986. The Fact Sheet describes the chemical, identifies use patterns, and summarizes the science findings as to toxicology, physical and biochemical characteristics, environmental characteristics, ecological characteristics, and tolerances. The 9-page Fact Sheet also states EPA's regulatory position on diazinon. Basically the summary indicates that: Diazinon is to be reclassified as Restricted-Use; additional toxicology testing will be required for typical end-use products; guidelines for diazinon use will be developed to protect threatened and endangered species; re-entry guidelines will be established; and a groundwater contamination advisory statement will be added to the label.

Limited amounts of diazinon (< 150 pounds in FY 1988) are used in USDA Forest Service activities; however, users should be aware of the changes that resulted from EPA's review and that are summarized in the Fact Sheet.

For a copy of the diazinon Fact Sheet

CONTACT: DENNIS R. HAMEL

(703) 235-8209

NURSERY EIS REVIEW NEARS COMPLETION

The Pacific Northwest Region (R-6) recently distributed draft copies of their nursery environmental impact statement (EIS). Comments on the EIS, which proposes five alternatives for managing weeds, insects, diseases, and animal damage at R-6 nurseries, are due May 22.

Upon receipt, all comments on the draft EIS will be considered by an interdisciplinary team and incorporated, as appropriate, into a final document that will be the basis of a Record of Decision (ROD). The ROD is due about mid-August or September.

For additional information about the EIS or its timetable

CONTACT: GEORGE MATEJKO

(503) 326-7755

NEW PLANT MOLECULAR BIOLOGY LAB OPENS

A new USDA Plant Molecular Biology Laboratory (PMBL), a focal point for genetic engineering in the Agricultural Research Service, was dedicated April 21 in Beltsville, Maryland. Administrator R. Dean Plowman, said the new laboratory will provide special leadership to biotechnology programs at the Beltsville Agricultural Research Center. It will cooperate with over 100 scientists in about 25 laboratories at the center and with many other Federal, State, and industry scientists nationwide. The lab is the second major USDA center of plant biotechnology. Nearly two years ago, ARS opened the Plant Gene Expression Center, in cooperation with the University of California, at Albany. Scientists at Albany are learning how genes are expressed--turned on and off--in plants and the biochemical nature of their expression.

For followup on this new laboratory and its research responsibilities

CONTACT: AGRICULTURAL RESEARCH CENTER

(301) 344-3078

TREATING FOR TERMITES

As reported recently in **Texas Monthly** and the **Forest Service Environmental Health Engineering Newsletter**, many homes around the country, particularly in the South, have been treated over the years with termiticides. These chemicals (chlordane, aldrin, heptachlor, lindane, and others) have also been used in homes, in vegetable gardens, and around structures to kill various insects. Studies have pointed to these chemicals causing human health problems. The EPA is phasing out the use of chlordane for termite treatment. However, there are still termite treatment companies or applicators who are using chlordane and other products, occasionally in unapproved ways. Before treating your home or contracting to hire a treatment company for the FS, check the chemicals that are being used, how they are to be applied, ask for the material safety data sheets, check with State agencies on licensing of the companies or individuals you are dealing with, and ask about their insurance coverage for damages. If you are hiring someone for your home, check your own insurance policy for coverage on chemical applications for insect treatment. Horror stories of owners who hired companies to treat their homes and then had to abandon them because improper treatments "poisoned" the dwelling do exist. If the soil under or around a building is contaminated to the point that the dwelling is uninhabitable, who pays for the soil clean-up which can be labeled as a hazardous waste site? Exercise caution!

Questions on what to do when treating for termites should be addressed to an agency-designated pesticide coordinator or

CONTACT: DENNIS HAMEL

(703) 235-8209

NEW FOAM MARKERS AVAILABLE

Two firms (Lesco, Inc. and Broyhill) recently announced the availability of new foam markers designed to be used on boom-type sprayers (e.g., in forest nurseries and young plantations). The new marker systems prevent costly skips and overlaps when applying pesticides or other expensive chemicals.

Both firms have markers that feature foam generators that mount on the ends of the boom instead of at the foam tank, thus greatly decreasing the air pressure required and ensuring smaller bubbles and thicker, longer-lasting foam.

The precise air/soap mixing system works like a carburetor, metering soap flow into the air flow to assure consistent foam and uniform delivery. Apparently using these systems, the foam stays light and stiff, using less soap solution per acre than systems that mix the foam at the tank.

These clog-free systems are reported to feature high quality components such as a 5-gallon, stainless steel tank and cover, stainless steel solenoids, and a heavy-duty, diaphragm-type air compressor.

For followup

CONTACT: ADJA INDUSTRIES, LTD.

(801) 973-6402

"DIDJA" MESSAGE

Didja see the message on DG recently about JAIL? Didja understand the message? Didja followup? Our responses to these "didjas" were Yes, No, and Yes. We suspect your were the same but in case you haven't had a chance to followup, here's some clarification.

On February 13 the **Federal Times** ran an article about several Federal employees who were recently "indicted and who face felony charges for violating Federal environmental laws (e.g., RCRA)...by allowing chemicals previously used in their work to remain stored in a building without a permit." The proposed penalties--\$250,000 to \$750,000 in fines and 5 years in prison (jail).

Although the article and the resultant DG message were somewhat alarmist they were based on fact. For instance, three Department of Defense managers were recently arraigned for illegally storing and dumping chemicals at a Pilot Plant at Aberdeen Proving Ground, Maryland. The Pilot Plant was an important part of the Army's chemical weapons program because it tested methods of mass producing chemical munitions and destroying large quantities of dangerous chemicals used in the manufacture. The Pilot Plant had been allowed to become deteriorated with leaking sewer pipes, broken dikes, and a collapsed roof. The prosecution has maintained that the three managers were high enough in the chain of command and knowledgeable enough about chemicals to be held accountable.

Forest Service personnel are not apt to face such drastic actions, since we aren't involved in the manufacture of chemical weapons, nor do we handle the quantity of hazardous chemicals involved in this type of operation. However, the case does reinforce our need to be aware of the hazardous materials (chemicals such as pesticides) we have at our field locations and ensure we are properly storing and disposing of them. We already have an established policy (FSM 2150 and 6700) for inventorying our chemicals and providing proper storage and disposal of those chemicals. By following those procedures, we will ensure this type of action is not brought against any Forest Service employees and we will affirm that we have gotten the "message." For followup

CONTACT: DENNIS HAMEL (PESTICIDES)	(703) 235-8209
SUZANNE BUNTROCK (HAZARDOUS MATERIALS)	(703) 235-2262
RALPH NEWMAN (HEALTH AND SAFETY)	(703) 235-1691
KATHRYN TOFFENETTI (OGC)	(202) 447 2651

ESA FINALIZES PLANS FOR CENTENNIAL SYMPOSIUM

The Entomological Society of America (ESA), which is celebrating its 100th anniversary this year, recently finalized plans for a symposium in Washington, DC that will focus on the achievements of the entomological sciences and examine their effects on society. The symposium is unique in that it is aimed at an audience of decisionmakers, legislators, Federal and State officials, industrial representatives, the press, and other non-entomological persons. The symposium will examine entomology in the past 100 years, the current state of the science, and what can be expected in the future. The 1 1/2-day symposium will begin September 26 with a session entitled "A Century of Progress." The symposium will be held in Carmichael Auditorium, National Museum of American History, Smithsonian Institution. Dr. Perry Adkisson of Texas A&M will moderate the session and invited speakers include former Forest Service researcher Dr. Carroll B. Williams and ESA president Dr. Dorothy Feir. To obtain a reservation to attend the symposium

CONTACT: TERRI WRIGHT (ESA)	(301) 731-4535
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DAILY PEST SUPPRESSION REPORT

Under the guidance of Dan Twardus, Northeastern Area, Morgantown Field Office, the Forest Service has designed a computer database to track daily pest suppression activities in 1989. The information will be on the Data General and will serve to brief the State and Private Forestry Deputy Chief and others on cooperative pest suppression efforts. Pest suppression reports will focus on the gypsy moth; however, control efforts against the Douglas-fir tussock moth, the western spruce budworm, and the forest tent caterpillar will also be tracked. Daily reports will include: location of the treatment site(s), total acres to be sprayed, acres treated the previous day, acres treated to date, and percent project completion. Daily reports will be submitted to the Washington Office. For followup

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The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

PESTICIDE HEALTH ADVISORIES

The Health Advisory Program, Office of Drinking Water, U.S. Environmental Protection Agency (EPA) recently released several health advisories (HA's) on pesticides used in forest management. Included were the following active ingredients: Diuron, 2,4,5-T, hexazinone, picloram, simazine, dalapon, ammonium sulfamate, propoxur, carbaryl, atrazine, bromacil, chlorothalonil, dacthal, diazinon, 1,3-dichloropropene, dicamba, diphenamid, endothall, glyphosate, MCPA, and tebuthiuron.

Health advisories provide informal, technical guidance to assist Federal, State, and local officials responsible for protecting public health. The advisories provide information on the health effects, analytical methodologies, and treatment regimes that would be appropriate if particular chemicals were found to be contaminants in drinking water. The HA's describe non-regulatory concentrations of drinking water contaminants at which adverse health effects would not be anticipated to occur over specific exposure durations. The HA's contain margins of safety designed to protect the public at large as well as sensitive individuals.

Copies of the HA's for the 21 ingredients listed above will soon be sent to Forest Service field personnel via a pesticide-use advisory memorandum (No. 439). The information in the HA's should be useful to persons responsible for responding to public health concerns and to preparers of documents written in compliance with the National Environmental Policy Act. Any questions on the HA's should be directed to EPA.

CONTACT: SAFE DRINKING WATER HOTLINE

1-800-426-4791

NEW WOOD PRESERVATIVES PROPOSED

The U.S. Environmental Protection Agency recently received a request to register two previously unregistered pesticide products for use in protecting wood products from decay. The application was submitted by E.R. Butts International, Inc. on behalf of Binab USA, Inc.

The proposed new products are called Binab T Pellets and Binab Wettable Powder. Binab T Pellets are proposed for use on wooden utility poles, playground structures, and fence posts to control internal decay. Binab Wettable Powder is proposed for use to control decay on pruning wounds of trees. The products contain Trichoderma harzianum and T. polysporum as the primary active ingredients. These organisms are imperfect fungi of the family Moniliaceae and are being suggested as biological or biorational alternatives to conventional chemical wood preservatives.

Any comments on these proposed new pesticide uses should be submitted to EPA by April 28, 1989.

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GYPSY MOTH SUPPRESSION--1989

Appalachian Integrated Pest Management Program. On March 20, the Northeastern Area Director for State and Private Forestry signed a decision to select Alternative 5 for implementing the Appalachian Integrated Pest Management (AIPM) Gypsy Moth Demonstration Project in Virginia and West Virginia. The Director of the National Park Service, a cooperating agency in preparing the environmental impact statement (EIS), also adopted the AIPM EIS and agreed to implement Alternative 5 on lands administered by the National Park Service.

The primary objective of the AIPM effort is to slow the spread and reduce adverse effects of gypsy moth within the project area, which includes 18 counties in Virginia and 20 counties in West Virginia totaling approximately 12.8 million acres of private, municipal, county, State, and Federal lands. Under the selected alternative (one of 6 considered in detail) gypsy moth populations could be treated in the general project area using gypsy moth-specific tactics, biological tactics, and the insecticide diflubenzuron. Treatment of gypsy moth populations in wilderness and National Park Service lands zoned as "natural," would not normally be considered. However, if specific extenuating circumstances caused by high population levels of gypsy moth occur with the potential to cause significant adverse effects to these areas, treatment with gypsy moth specific tactics or biological tactics would be considered.

For additional information on the AIPM project

CONTACT: ALLAN T. BULLARD	(304) 291-4891
AIPM Program Manager	FTS 923-4891

Eastern Cooperative Suppression. In addition to the AIPM program, approximately 750,000 acres of forested land infested with the gypsy moth will be treated using cooperative State/Federal pest suppression funds in the following States in 1989: Delaware (40,000 acres), Maryland (140,000 acres), Massachusetts (1,500 acres), Michigan (72,000 acres), New Jersey (19,765 acres), Pennsylvania (241,000 acres), Vermont (1,000 acres), Virginia (172,066 acres), West Virginia (49,390 acres), North Carolina (7,680), and the District of Columbia (330 acres).

The insecticides planned for use in these projects include Bacillus thuringiensis (Bt) and diflubenzuron (Dimilin). For followup information

CONTACT: PETE ORR (NA)	(215) 690-3153
Staff Director	FTS: 489-3153
HARVEY TOKO (R-8)	(404) 347-2989
Staff Director	FTS: 257-2989

Western Suppression. In the western U.S., plans are to make two applications of Bacillus thuringiensis on 1,200 acres (total of 3,600 acres) in 1989.

For followup

CONTACT: DAVE HOLLAND	(801) 625-5257
Staff Director	FTS: 586-5257

INTERAGENCY PESTICIDE MONITORING WORKSHOP SCHEDULED

The Environmental Protection Agency, Office of Pesticide Programs, is sponsoring an Interagency Pesticide Monitoring Workshop, June 6-7, 1989 at the Sheraton National Hotel in Arlington, Virginia. The objectives of the workshop are:

- o Promotion of better communication between Federal and State agencies.
- o Promotion of better cooperation between those responsible for generating pesticide monitoring data and those responsible for using it.
- o Application of pesticide monitoring data to the regulatory process.
- o Improvements in the generation, interpretation, storage, and dissemination of pesticide monitoring data.

Participants will include representatives from EPA Program Offices and Regions, fifteen Federal agencies, and State environmental health agencies.

The format of the workshop will be that of panel presentations followed by a general discussion/question and answer period. Panel members will be experts selected from various Federal and State agencies. Panel topics will include water, soil, air, human health, ecological effects, food residues, and use/usage monitoring. Each panel will be addressing the following:

- o Pesticide monitoring issues, objectives, and problems.
- o Innovative ways to meet objectives and solve problems.
- o Cooperative efforts, including the sharing of data, costs, and expertise, that are currently available and/or required for the future.
- o The regulatory application of pesticide monitoring data; what types of data are available, and identification of data gaps.

In addition, there will be space and time allotted for a number of poster presentations. The poster session will be held Tuesday evening, June 6. The purpose of the poster session will be to share scientific research and new ideas in the area of pesticide monitoring.

Coordination for the workshop is being done by EPA's Pesticide Monitoring Program Section. The workshop is being limited to 150 people, therefore, if you have an interest in attending

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REGION 6 PLANS BUDWORM TREATMENT

On April 7, the Pacific Northwest Region (R-6) signed a "Decision Notice" and "Finding of No Significant Impact" for their plans to manage the western spruce budworm (WSBW) in 1989. The Region conducted analyses of 15 units in Oregon and Washington covering 624,500 acres. They prepared an Environmental Assessment that documents the analysis and the proposed management alternatives. The "No Action" alternative was considered for all units and was selected for 12 of them. Alternative 2, direct suppression with Bacillus thuringiensis (Bt), was decided on for the remaining units (approximately 18,500 acres) on the Mt. Hood and Wallowa-Whitman National Forests.

The economic analyses for the three units chosen for treatment indicate that benefits derived through implementation outweigh the projected costs associated with direct suppression. Factors considered included: anticipated growth loss as a result of continued WSBW infestation, projected stumpage values based on current price trends, and pesticide application costs.

The planned application of direct suppression tactics is subject to verification later this spring of high pre-spray budworm population levels.

For additional information on R-6 plans

CONTACT: JIM HADFIELD (503) 294-7448
Grp. Ldr., Operations FTS: 423-2727

NEW AIRCRAFT CHARACTERIZATION TOOL

One of the most difficult jobs for the forest manager is assessing the performance of the aircraft used to apply pesticides in forestry. Not only are measurements difficult to make, but the time and effort required to get the results has often meant aircraft characterization has been overlooked or, at best, not been practical on-site. Solving this problem needs a tool that can make all the required weather and deposit measurements on-site and display results within a short time after the run is made. It should also be able to present the results simply to pin-point problem patterns and make adjustments to the spray system configuration quickly.

A swath kit has been developed by researchers at Pennsylvania State University. Funded in part by the Forest Service, the swath kit will be used by agency personnel to fulfill the objectives described above; providing a tool which can be used prior to the application of pesticides.

Its design is based on a portable computer which centralizes much of the data processing and analysis, making operation simple and the construction compact. The use of simple, specially designed software, and a comprehensive 12,000 word on-line help system, make learning to use the swath kit quick, and getting results easy.

CONTACT: RICHARD REARDON (FS) (304) 291-4891
JOHN BRYANT (PENN ST) (814) 238-7638

VIRAL ENHANCEMENT

In a recent issue of *Insight* magazine (April 17), it was reported that plant biologists have discovered that a protein component of certain insect viruses very neatly paves the way for that virus to enter and effectively eat away the stomach lining of insect pests. If the protein is added to other viruses, they have found, insect-killing ability is increased hundredfold.

The biologists have filed for a patent for the protein, which is called a viral enhancing factor. It is believed to be the first protein with such capabilities found in an insect virus and the only such element found in insect-killing viruses, says Robert Granados, head of the plant protection department of the Boyce Thompson Institute in Ithaca, New York.

The protein was isolated from the particle coating of the common insect virus Trichoplusia ni granulosis, one of a large group of organisms called Baculoviridae that trigger viruses in several insect pests including the gypsy moth, corn borers, and tobacco budworms. Having isolated one of the genes with the code for the protein, Granados and his colleagues envision several possibilities for its use in fighting pests. One is inserting the gene into plants so that insects feeding on them would be more vulnerable to viruses and deadly bacteria (See "**Short Subjects...**", Issue No. 89-6, page 3). The effectiveness of chemical pesticides also may be increased with this protein as an additive.

SUDS AND BUGS

Soap--as we all know--is a great substance with which to wash our bodies. But it's not what we should be using to wash foods. That's the guidance from Ann Chadwick, USDA's Consumer Advisor. Ms. Chadwick advises that consumers should wash fresh fruits and vegetables with plain water, but not soap and water. She was reacting to information recently disseminated by a public-interest organization which advocated using soap to wash fruits and vegetables.

That organization had recently raised questions about the safety of pesticide residues that may be found on fruits and vegetables as a result of attempts to control "bugs." Chadwick said that, in some cases, the advise about using soap to wash fruits and vegetables had been attributed to government sources, but, "In fact, USDA, the U.S. Environmental Protection Agency, and the Food and Drug Administration--the three Federal agencies with regulatory responsibility for foods--all recommend washing fresh fruits and vegetables with just plain water," she said.

Chadwick also explained that washing with water helps remove soil particles, insects, and other debris that may be hard to see, especially on leafy green vegetables. She noted that washing with water also should help remove any existing surface pesticide residues and other impurities, and that thick-skinned produce may even be scrubbed with a brush if desired.

"But we don't recommend washing food with soap," she underscored. "Soap residues may be difficult to remove from some foods--and soap simply isn't meant to be consumed. For followup

CONTACT: ANN CHADWICK

(202) 382-9681

BIOCONTROL TURNS 100

Almost the entire March issue of **Agricultural Research**, a sanctioned publication of the Agricultural Research Service, is devoted to biological pest control in recognition of 100 years of this form of pest management. The first intentional example of biocontrol in the U.S. took place in 1889 when the *Vedalia*, an Australian ladybird beetle, was imported to California to control cottony cushion scale. To read about this success story and others involving various parasites and predators that have become alternatives to pesticides

CONTACT: EDITOR, AGRICULTURAL RESEARCH (301) 344-3280

RESOURCE TECHNOLOGY 90 BEING PLANNED

Resource Technology 88 was a symposium held in Fort Collins, Colorado that served to inform natural resource managers about the uses of advanced computer-assisted technology such as geographical information systems, decision support systems, expert systems, and remote sensing. About 300 natural resource managers from government, academia, and industry attended the sessions and it was recommended that another symposium be held in 1990.

Resource Technology 90 is being planned to be held in Washington, DC in the fall of 1990. Agencies and private industry representatives, including the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the Agency for International Development, the Department of State, the Canadian Forestry Service, the Bureau of Land Management, the Fish and Wildlife Service, the United States Geological Survey, Hewlett Packard, Arthur Anderson, Inc., and the USDA Forest Service have all agreed to be sponsors.

As a sponsor, the Forest Service has the opportunity to suggest that subjects of importance to forestry be included on the program. Toward that end, the agency is soliciting proposals from potential participants. If you know of advanced technology that is in need of being transferred to other natural resource managers at a symposium like Resource Technology 90

CONTACT: KEN KNAUER (703) 235-8209

INTERMOUNTAIN REGION HOLDS PESTICIDE/IPM WORKSHOP

The Intermountain Region of the Forest Service (FS) recently completed (April 14) a FS/Utah State University (USU) pesticide and integrated pest management (IPM) workshop. The workshop provided updates to approximately 80 FS and Bureau of Land Management employees in pesticide project administration, IPM, and pesticide use. The training was in preparation for taking Utah's pesticide applicator examinations. Utah, Idaho, and Wyoming recognize each State's testing results leading to certification of applicators of restricted-use pesticides. Instructors included representatives from the FS, Agricultural Research Service, Animal and Plant Health Inspection Service, USU, and the State of Utah. In addition, representatives from DuPont and American Cyanamid made presentations on their products. For followup

CONTACT: GARTH BAXTER (801) 625-5257

WATER AND OTHER INERTS

In any pesticide product there are two categories of ingredients. The first category includes active ingredients, the particular chemicals with active pesticidal capabilities. The second category includes inert ingredients, added to the formulation to help the active ingredient do its job.

EPA defines inerts as "anything that is intentionally added to the pesticide product which is not pesticidally active." Inerts are used to increase the effectiveness of the active ingredients. For example, surfactants make the active ingredients stick better and emulsifiers help keep the active ingredient in a liquid solution so that it can be sprayed.

Altogether, about 1,200 inert ingredients are used in pesticide formulations. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) governs both active and inert ingredients. Currently, FIFRA requires that manufacturers conduct a full array of animal toxicological tests on the active ingredients in order to register a product. The tests are made to determine acute toxicity, the potential to cause birth defects, and cancer or similar concerns.

At present, only acute toxicity testing is required for inert ingredients; however, pressure is being put on EPA to address this issue since some people are asking questions concerning inert ingredients. As a result, EPA published a policy statement in the **Federal Register** on April 22, 1987. The agency's approach has been to classify the entire list of inert ingredients into four categories based on the chemical's known toxicity. The first category includes some 50 chemicals, inerts of known toxicological concern. The second category includes about 60 inert ingredients that are believed potentially toxic because of their structural similarity to the substances in the first category. About 800 inerts whose toxicity is unknown are placed in the third category. Substances were included in this group if there was no basis for listing them on any of the other three lists. The fourth category includes approximately 300 inert ingredients of minimal concern or generally recognized as safe, such as cookie crumbs, corn cobs, and water.

The first and second categories are obviously the ones that EPA gives the highest priority for additional testing. Any manufacturer with pesticide products on the market that include any of the ingredients in the first or second list will be asked to either find a substitute or agree to do substantially more toxicological testing.

The EPA is now requiring registrants of any product that contains an inert ingredient from the first category to amend their EPA registration and add the name of toxic inerts to their labels. Additional exposure data, and in some cases, additional toxicity data may be required of many of these inerts. In addition, no new registrations involving these materials will be granted by EPA until further information can be provided.

EPA attention to this subject is expected to raise the visibility of the question, "What are inerts and are they safe?" Fortunately, the inert carrier/surfactant in many pesticides is water--an additive we hope is of little toxicological concern. For other inerts refer to the January 29, 1988, 2150 letter sent to Regions, Stations and the Area.

END

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BIOTECHNOLOGY AND SUSTAINABLE AGRICULTURE

The First Annual conference of the National Agricultural Biotechnology Council (NABC), a consortium of Boyce Thompson Institute, Cornell University, Iowa State University, and the University of California at Davis will be held at the Scheman Continuing Education Center, Iowa State University, May 22-24. The NABC was founded in 1988 with initial support from the Joyce Foundation and the USDA. The NABC plans to identify and address key national issues in agricultural biotechnology. The overall objective is to discuss policies that will guide the U.S. in effectively developing agricultural biotechnology.

Conference participants will consider policy issues associated with biopesticides, disease control in animals, animal growth promotants, and herbicide resistance. Technical, social, economic, ethical, environmental, health, and safety aspects of each topic area will be examined and policy recommendations developed.

If interested in attending

CONTACT: WALTER R. FEHR (515) 294-9818

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

PESTICIDE EXPERTISE SOUGHT

The U.S. Department of Agriculture (USDA) is seeking the names of recently retired employees with expertise in pesticide use and evaluation. The level of activity surrounding pesticide use has increased significantly in recent months and it is expected that the U.S. Environmental Protection Agency (EPA) will soon be requiring additional pesticide information input from experts in agriculture for their regulatory process. USDA input to EPA is through the National Agricultural Pesticide Impact Assessment Program (NAPIAP); however, the increased demands for pesticide information have placed heavy demands on available personnel, therefore, the Department is in the process of identifying individuals who may have interest and expertise in assisting with assessment of pesticides used in agriculture and forestry.

Interested persons will be assigned to work on pesticide assessment teams to prepare documents that evaluate the economic and biologic importance of pesticide use. This information will then be balanced with risk information gathered by EPA and regulatory decisions will subsequently be made.

Anyone knowing of retirees who might be interested in assisting with this effort are asked to provide the name, address, phone number, area of pesticide expertise, and previous affiliation of those individuals.

CONTACT: MAX OLLIEU

(703) 235-1560

ADDITIONAL PESTICIDE FACT SHEETS AVAILABLE

As the U.S. Environmental Protection Agency (EPA) continues its process of special review and reregistration of pesticides, they continuously update their "Pesticide Fact Sheets," (See "Short Subjects....Issue No. 89-3). For example, three new fact sheets (carbofuran, phorate, and mecoprop) have recently come to our attention. Since each covers forestry-use situations, it may be advisable to add them to your data files. For copies

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PESTICIDE SPECIALIST

(703) 235-8209
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NEW REGISTRATION STANDARD FOR BACILLUS THURINGIENSIS

In addition to the Fact Sheets mentioned above, EPA recently finalized for distribution a new registration standard for biological pesticides containing Bacillus thuringiensis (Bt). The new standard covers registration data requirements for all currently recognized strains of Bt as well as those that have been genetically engineered.

For a copy of the Bt registration standard

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INNOVATIVE PESTICIDE DELIVERY TECHNOLOGIES

Timed-Released Fertilizer/Pesticide Tablets. Chemical control of fusiform rust in southern pine nurseries has traditionally been with ferbam, an early contact fungicide, applied at every-other-day intervals. Missing even 1 spray during the March-to-June spore season could jeopardize the entire seedling crop. With the development of triadimefon (Bayleton) in the 1970's, a systemic fungicide could be used at monthly intervals. However, once seedlings were removed from the nursery, no further chemical control was economically feasible, even though the seedlings were susceptible to infection each spring for several years.

In 1985, a research project was initiated by Estech, Inc. and the Department of Forestry at the University of Florida in cooperation with the Integrated Forest Pest Management Cooperative, Mobay Corporation, and Mitsubishi Kasei. The project was designed to investigate the potential of incorporating Mobay's Bayleton into a time-released fertilizer tablet called **Woodace**.

In 1989, a large pine pulp manufacturer has scheduled an operational planting of about 200 acres to test **Woodace** tablets to further evaluate their potential for use in southern pines. After a 5-year period, a thorough review of fusiform rust incidence and tree volume in the research plots will be conducted. If the results corroborate initial results, this promising method of providing economically-feasible post-nursery pest management may become standard practice in future southern pine reforestation programs.

For further information, contact R.S. Webb, U. of Florida, (904) 392-1792.

Dead Cell Bt Delivery. Mycogen, Inc., has developed a new biological pesticide delivery system called **MCap** whereby Bacillus thuringiensis (Bt) endotoxin genes are spliced into a host bacterium (e.g., Pseudomonas) that does not contain spores or other extraneous, non-toxic inclusions. The transformed bacteria are fermented and optimum levels of delta endotoxin are produced. The host bacteria are then killed with an additive. The Bt toxins remain behind, encapsulated in a dead bacterial "shell." Subsequent formulation of the product results in breakdown of the dead cell shell and release of the Bt toxin. The process at this point is much like a human ingesting a gelatin capsule pill with subsequent release of the active ingredient. The benefits of Mycogen's **MCap** technology include: extended field persistence, increased shelf life, and environmental safety. For additional information on Mycogen's plans to further develop this technology, contact them at (619) 453-8030.

Plant Endophytes. Crop Genetics International, Inc. has also developed a new Bt delivery system. Called **Incide**, the CGI approach involves genetically engineering bacteria to carry the gene for Bt endotoxin and provide systemic plant protection much like human vaccinations provide disease protection. **Incide** involves the insertion of Bt genes into an endophytic bacterium (e.g., Clavibacter xyli c.). The Bt-transformed endophyte reproduces in the plant and confers insect resistance to the plant through the presence of the Bt toxin. **Incide** has been shown to be environmentally safe since there is no plant to plant transmission, no insect vectoring, and no seed transmission. Although initially developed to protect corn from pests like the European corn borer, the use of endophyte technology has applications in all of agriculture, including forestry.

COMMENTS REQUESTED ON BIOTECHNOLOGY REGULATION

The U.S. Environmental Protection Agency (EPA), unable to gain approval from the Office of Management and Budget (OMB) for its biotechnology regulatory scheme, has issued a request for comments on five broad policy questions related to EPA's role in regulating biotechnology products that the agency believes are covered by the Toxic Substances Control Act (TSCA). TSCA allows EPA to regulate "chemical substances," which the agency defines as including all micro-organisms developed for "commercial purposes" except those excluded from TSCA jurisdiction. Exclusions include "those micro-organisms manufactured, processed or distributed in commerce for use as pesticides, foods, food additives, drugs, cosmetics, or other related items."

The basic issues on which EPA is seeking public comment include defining the scope of the micro-organisms subject to EPA's review, how broadly or narrowly should "commercial purposes" be defined, and to what extent should independent expert review groups be established. Comments are due May 16.

SEE: FEDERAL REGISTER

FEBRUARY 15, 1989

PUBLICATION OF INTEREST

"How to Write and Publish a Scientific Paper" is the name of a classic step-by-step guide for writing and preparing scientific papers for publication. Clothbound, ISBN 0-98774-472-1, \$21.95; paperbound, ISBN 0-98774-456-X, \$14.95. Order from ORYX Press, 2214 North Central at Encanto, Phoenix, AZ 85004 or

CALL: ORYX PRESS

1-800-457-ORYX

AGRICULTURAL RESEARCH INITIATIVES FOR 1989

In a January, 1989, report entitled "Research Initiatives: An Update of the Research Agenda of the State Agricultural Experiment Stations," the Experiment Station Committee on Organization and Policy (ESCOP) presented a fresh new statement on agricultural research needs for the next four years. The purpose of the ESCOP effort was to review current research priorities and establish new initiatives. A total of 21 initiatives was defined. The top three initiatives identified in need of national attention were: Water quality, biotechnology, and improved pest management. Interestingly, each of these involves pesticides from one or more perspectives. For example, protection of groundwater from pesticidal contamination, development of new or enhanced biologically active pesticides using biotechnology, and improved pest management through appropriate pesticide formulation, application, and use technology.

It is expected that the State Agricultural Experiment Stations will use this document as a planning tool to guide their research efforts. It also provides an opportunity for FS and other researchers to identify possible cooperative efforts needed to stimulate action on the initiatives identified by ESCOP.

For a copy of the full report (ESCOP 89-1)

CONTACT: N. P. CLARKE, CHR.
PLANNING SUBCOMMITTEE

TEXAS AGRICULTURAL EXPERIMENT STATION
COLLEGE STATION, TX 77843-2147

NEW BIOLOGICAL OPINIONS ON ENDANGERED SPECIES

In the fall of 1988 the Environmental Protection Agency (EPA) requested re-initiation of Section 7 formal consultation with the Fish and Wildlife Service (FWS) on selected portions of four pesticide clusters (crops, forestry, mosquito larvicides, and rangeland/pastureland) in the EPA Endangered Species Protection Plan. EPA's request was based on re-analyses of new and existing data, error correction, proposed new reasonable and prudent alternatives, and more substantive data on certain species and pesticides.

In addition to the consultation request, EPA submitted to the FWS the following supportive information:

1. EPA's Standard Evaluation Procedure for Risk Assessment.
2. Original cluster consultation requests and resulting opinions.
3. Entry indices depicting application rates, formulations, and sites of pesticide use.
4. Quantitative-use assessments, where available, showing the amount and distribution of pesticides used.
5. Chemical fact sheet or profiles for each pesticide.
6. Agricultural statistics from State publications providing distribution and use of pesticides.

In response to EPA's request for re-initiation of formal consultation the FWS reviewed all of the analyses that had already been completed, and pursuant to regulations (50 CFR 402), and EPA's concurrence, the consultation process was re-started. The FWS responded with a detailed letter addressing EPA's six points (see above) and provided a new biological opinion for each pesticide and all appropriate Federally listed endangered species. Included within the opinions were Reasonable and Prudent Alternatives (RPA) and Reasonable and Prudent Measures (RPM) designed to protect the listed species. A FWS evaluation team considered characteristics for each pesticide and endangered species. They constructed endangered species/pesticide risk assistance models to evaluate exposure and toxicity of chemicals to determine jeopardy or no jeopardy decisions.

The FWS requested that EPA and USDA review the draft of the new biological opinions. Subsequently, the Wildlife and Fisheries and Forest Pest Management staffs of the Forest Service completed their evaluation of the new draft opinions. The FWS document, with minor corrections, was found to adequately define protection of the listed species and pesticide toxicities. The Forest Service review team acknowledged the extensive time and effort expended by the FWS in its preparation of the draft document. The Forest Service review will be submitted to the Department for inclusion in a formal USDA response.

For followup

CONTACT: SHELLY WITT

(703) 235-8209 or 235-2923

PESTICIDE APPLICATION COMPENDIUM PUBLISHED

A comprehensive guide called "The Safe and Effective Use of Pesticides" has just been published by the University of California. Its purpose is to help pesticide applicators select, use, handle, store, and dispose of pesticides properly. Anyone who uses pesticides, supervises the use of pesticides, or instructs others in the proper use of pesticides, should find this book an important reference.

The 400-page publication is the required study guide for all of the California Department of Food and Agriculture's pesticide applicator examinations; however, the information in most cases is applicable to pesticide users in other States.

The principles described in the publication apply to agricultural, structural, landscape maintenance, greenhouse and nursery, right-of-way, forest, aquatic, demonstration and research, public health, and regulatory pesticide-use situations. Special attention is given to prevention of groundwater contamination, protection of endangered species and other wildlife, and reduction of environmental problems caused by pesticide use.

"The Safe and Effective Use of Pesticides" is the first of six volumes in the University of California's Pesticide Application Compendium. The comprehensive series is designed to serve as a text for instructional use, as a reference book, and for persons preparing for the State pesticide applicator or pest control adviser examinations.

To order this \$30.00 publication, No. 3324 (ISBN 0-931876-83-4)

CONTACT: ANR PUBLICATIONS
(415) 642-2431

6701 San Pablo Avenue
Oakland, CA 94608-1239

INTERNATIONAL CHEMICAL INFORMATION EXCHANGE

The U.S. Environmental Protection Agency (EPA) in cooperation with the Organization for Economic Cooperation and Development (OECD), has established a database for sharing chemical information internationally. Called EXICHEM, the database provides a mechanism to exchange information among personnel in member countries on planned and ongoing activities on existing chemicals. The database serves as the backbone for 12 chemical-specific information clearinghouses which share available toxicology data and other related information. The database presently contains information on over 3500 chemical related activities reported by 35 different member country government and industrial organizations, and the International Programme on Chemical Safety of the World Health Organization. The database should be useful to the international community in the regulatory and hazard evaluation arena. It enables member countries to share results of toxicology testing and hazard/risk evaluation and avoid duplication of effort. Present plans are for the database to be updated twice annually.

If interested in obtaining a copy of the EXICHEM database, send either one high density or two low density, IBM PC compatible, floppy disks to JOANNE M. KLA, Risk Analysis Branch, Office of Toxic Substances, EPA (TS-778), 401 M Street, SW, Washington, DC 20460.

ENGINEERING INSECT RESISTANCE

Improved levels of insect resistance have been genetically engineered into cotton by Monsanto researchers. Monsanto first achieved genetically engineered insect resistance in plants in 1986 for sensitive, caterpillar-type insects such as the cabbage looper and tobacco hornworm. The in-plant production level of the naturally-occurring protein that confers the insect-resistance characteristics has now been increased. These plants can now resist attack by major pests such as cotton bollworm, tobacco budworm, and beet armyworm. The approach is based on inserting into plants the gene for protein produced by Bacillus thuringiensis (Bt) that interferes with insects' feeding.

Research on using this same technology to introduce Bt into forest trees is continuing. For more information

CONTACT: ROY FUCHS (MONSANTO) (314) 694-1000

USDA STEPS UP BIOLOGICAL CONTROL EFFORTS

Marking 100 years of biological control of agricultural pests--starting in 1889 with Vedalia beetles from Australia checking a California citrus pest--the U.S. Department of Agriculture is stepping up its biocontrol efforts. USDA recently signed two agreements calling for joint biocontrol research for the first time in Soviet labs. Work starts this summer in Kishinev and Leningrad on more than two dozen insect and weed pests. This spring, three ARS scientists go to China under a new five-year pact that includes a joint lab in Beijing. An ARS researcher has filed for patent protection on an improved gypsy moth virus. A pilot project will use a fungus to fight wilt in New Jersey eggplants. And plans are afoot for a Biological Control Service Institute to serve as an international clearinghouse for biological control.

For information on other USDA biocontrol research efforts

CONTACT: R. DEAN PLOWMAN (ARS) (202) 447-3656

DIRECTORY OF RISK ASSESSMENT PROJECTS

The U.S. Department of Health and Human Services has identified the need to develop a directory of risk assessment projects. The purpose of the Directory will be to provide brief descriptions of completed, ongoing, or proposed risk assessment activities including the assessment of risk to human health of biological, chemical, or physical agents. The Directory entries will include sufficient detail about a given project to enable users to determine relevance to other problems. Initially, the Directory will be maintained in an online file at the National Library of Medicine. A hard copy publication may follow.

The utility of the Directory will depend on its completeness, timeliness, and credibility of content, therefore, agencies have been asked to identify appropriate contact persons to provide initial and updated information. Dr. Zdenka Horakova has been designated the Forest Service representative. One of her tasks will be to compile a list of forestry risk assessments to be submitted for inclusion in the Directory. For followup

CONTACT: ZDENKA HORAKOVA (703) 235-8209

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AGDISP SPRAY MODEL WORKSHOP SCHEDULED

The second "hands-on" training workshop using the AGricultural DISPersal (AGDISP) model to evaluate pesticide applications, will be conducted in Missoula, Montana March 27-31, 1989. AGDISP is a scientific computer program that predicts how aircraft-unique wake and propulsion characteristics affect the ground deposition of aerially-applied materials like pesticides. In other words, AGDISP provides a quick way to characterize the effects of an aircraft on swath width. Workshop attendees will generate graphic outputs on Data General terminals in the Northern Region office and information learned will be transferable to operational field situations. For followup

CONTACT: BOB EKBLAD

(406) 329-3988

ROIA

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

FOCUS ON THE GYPSY MOTH

The March/April issue of *American Forests* includes a "Focus Section" on the gypsy moth entitled "Taking AIPM at the Gypsy Moth." The title is a spoof of the gypsy moth demonstration project called the Appalachian Integrated Pest Management Program (AIPM), which is designed to slow the spread of this defoliator (See "Short Subjects...", Issue Nos. 88-12 and 15). Included in the article by Chris Bolgiano are summaries of areas of infestation, preferred hosts, defoliation acreages, isolated infestations, and methods for control including the use of nucleopolyhedrosis virus, Bacillus thuringiensis, diflubenzuron, carbaryl, and acephate pesticides.

In addition to being updated by reading this article, further updates may be obtained through the AIPM program offices in Morgantown, West Virginia

CONTACT: ALLAN BULLARD
PROGRAM MANAGER

FTS 923-4891
(304) 291-4891

GUIDE TO SOURCES OF PERSONAL PROTECTIVE EQUIPMENT

The U.S. Environmental Protection Agency (EPA) recently prepared a pesticide applicators guide including a directory of sources of personal protective equipment. The guide is organized into sections of equipment distributors and suppliers, equipment manufacturers and sales representatives, protective clothing, gloves, and certified respirators. The guide is organized on a State by State basis, and where available, nationwide toll-free telephone numbers are also provided.

The Washington Office has requested a master copy of the three-hole-punched guide which will be duplicated and distributed to the field via letters to Regional Foresters, Station Directors, and the Area Director.

CONTACT: DENNIS HAMEL (FS)
BOB BIELARSKI (EPA)

FTS 235-8209
FTS 557-7410

BLUEPRINT FOR THE ENVIRONMENT

"Blueprint for the Environment" is the title of a report submitted to President Bush by a coalition of 18 groups representing America's environmental community. The report provides a comprehensive set of recommendations for consideration by the President concerning issues ranging from global warming, tropical deforestation, water and air pollution, endangered species protection, and population growth. Although no specific issue is raised relative to pesticide use, several of the issues point to pesticide use as a contributory factor to one or more of the larger problem areas. The full 300-page report is available for \$13.95. A 32-page summary is also available. For copies

CONTACT: HOWE BROTHERS (PUBLISHER)
DENNIS R. HAMEL (SUMMARY)

1-800-426-5387
(703) 235-8209

CDC SUPPORTS FS EFFORTS

Dave Ketcham, Forest Service (FS) environmental coordinator, recently received a letter from the Centers for Disease Control (CDC) commending the FS on the general excellence of documents prepared in compliance with the National Environmental Policy Act (NEPA). The CDC letter, which was signed by Dr. David E. Clapp, environmental health scientist, said that FS documents are typically comprehensive, informative, and attractive. In addition, CDC personnel have "appreciated the efforts of FS offices to provide continuing information on the status of ongoing projects. This notification has been in a variety of forms including newsletters and requests for participation. Without exception, these notifications have been timely and informative, and perhaps most notably, reflect the enthusiasm and dedication of NEPA-document preparation teams."

Special commendations were given to the Pacific Northwest and Southern Regions for their vegetation management environmental impact statements and accessory documents.

The CDC also finds that FS NEPA documents comprehensively analyze all appropriate environmental issues. They have been particularly pleased to find that public health and safety issues are thoroughly analyzed. For example, as they pointed out in their response to the Appalachian Mountain DEIS, "we were pleased to find that the environmental analysis included explicit and high priority consideration of the impacts of vegetation management methods on human health and safety. The section entitled "Human Health and Safety" was listed first in the list of environmental consequences analyzed for this projects... and the "Human Health Risk Analysis" presented the reader with an easy to read but thorough assessment of the predicted impacts of herbicides on human health."

These comments reflect well on the Forest Service and its personnel and should serve as encouragement to continue with our implementation of both the spirit and the letter of the law mandated by NEPA.

CONTACT: DAVE KETCHAM (202) 447-4708
ENVIRONMENTAL COORDINATOR FTS 447-4708

PESTICIDES AND OTHER CHEMICALS IN THE NEWS

Anyone who hasn't heard all the hoopla over cyanide in grapes, daminozide on apples, or carcinogens in children's food in recent days must either be on a safari or otherwise indisposed to seeing, reading, or hearing the national news. This March madness started when the TV program **60 Minutes** aired a program February 26 that featured alleged injury to humans from a pesticide called Alar (daminozide). The **60 Minutes** program was followed the next day by the release of a report by the Natural Resources Defense Council (NRDC) which alleged that American children were at increased risk to cancer from pesticide-treated fruits and vegetables in their diets. (See next news item). Extensive followups on this issue also appeared in prominent news magazines.

SEE: TIME and NEWSWEEK

MARCH 27, 1989

PESTICIDES AND CHILDREN REPORT DRAWS FIRE

The report on pesticides and children released by the Natural Resources Defense Council (NRDC) (See "Short Subjects...", Issue No. 89-4, p. 3) has drawn fire from the U.S. Environmental Protection Agency (EPA), the U.S. Department of Agriculture, and others.

The NRDC report claims that children are being placed at risk from exposure to pesticides in their food because in setting standards, the federal government generally sets levels based on adult diets and adult physiology.

The EPA calls NRDC's report "misleading," its risk estimates "far out of line with existing data," and based on "data rejected by scientific peer review." In addition, EPA's acting deputy administrator John A. Moore countered NRDC claims by stating that "Food containing legal levels of pesticide residues is safe for people of all ages." The agency, he says, has developed a "more accurate method" for estimating such residues on food, and has routinely used safety factors when evaluating the risks to infants and children.

The USDA in a joint statement with the Food and Drug Administration (FDA) and EPA said that "the Federal government believes that it is safe for Americans to eat apples" and other agricultural products since "there is no evidence that pesticides or natural toxins in food contribute significantly to cancer risk in the United States.

Persons from both EPA and NRDC admit that infants and children may be more sensitive to certain toxic effects of pesticide residues. The NRDC says that the purpose of their report was to "prod" EPA to take a closer look at the situation. EPA personnel have already recognized this and have asked the National Academy of Sciences to study the issue and make appropriate recommendations by next year.

For followup

CONTACT: MAX OLLIEU

FTS 235-1560

COMING EVENTS

Mid-America Toxicology Course, April 23-28, 1989, Kansas City, Missouri. Contact: Curtis D. Klaasen, Ph.D., Professor of Pharmacology and Toxicology, University of Kansas Medical Center, Kansas City, KS 66103 (913) 588-7714.

International Symposium on Poisonous Plant Control, July 23-29, 1989, The Conference and Institute Division of Utah State University, Logan, Utah. Contact: Dr. Lynn F. James, USDA-ARS Poisonous Plant Research Laboratory, 1150 East 1400 North, Logan, UT 84321, (801) 752-2941.

Gordon Research Conference: Mechanisms of Toxicity, July 24-28, 1989, Kimball Union Academy, Meriden, New Hampshire. Contact: Dr. John A. Thomas, the University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, Texas 78284-7722, (512) 567-2045.

PESTICIDES AND CANCER

According to a report done jointly by Pennsylvania State University and York College of Pennsylvania, cancer rates in rural areas may be linked to certain kinds of pesticide use, though not chemical fertilizers. Historically, cancer rates in rural areas have been low. Since 1950, however, the difference in cancer mortality between cities and countryside has narrowed significantly.

The study used statistics on all cancer deaths from 1950-1969 compiled by the National Center for Health Statistics, and focused on cancer mortality rates among white males in rural American counties.

The researchers compared cancer mortality rates in 1500 rural counties with data on agricultural chemical use from the 1964 Census of Agriculture, the earliest available data on agricultural chemical use at the county level.

The results, according to Penn State University, showed that herbicide use in the counties was the strongest predictor of genital and lymphatic cancers and the second highest predictor of digestive cancer. Insecticide use was a significant predictor of deaths from respiratory cancer. Chemical fertilizer use; however, did not seem to be associated with cancer death rates.

The study only looked at associations between cancer mortality patterns and agricultural chemical use; it **does not demonstrate that the exposures caused cancer deaths**. It does point out patterns that need further study.

For more information on this study refer to "Agricultural Chemical Use and Cancer Mortality in Selected Rural Counties in the USA," Journal of Rural Studies 4:No.3, 1988 or

CONTACT: DR. C. SHANNON STOKES (814) 863-4656

CONGRESSIONAL LEADERS ASK USDA TO GIVE PESTICIDES HIGH PRIORITY

The Chairman and ranking members of the House Agriculture Committee have implored the new USDA Secretary, Clayton Yeutter, to give the agricultural use of pesticides his "highest priority." The letter to Secretary Yeutter, signed by Representatives de la Garza (D-Tex.), Chairman, Brown (D-Calif.), Roberts (R-Kans.), and Madigan (R-Ill.), noted the continuing concern of the public about pesticide-risks and singled out pesticide contamination of groundwater and pesticide residues on food as issues needing attention. The four Congressmen also noted that the uses of agricultural pesticides "will be high on the committee's agenda during the 101st Congress." Their letter concluded, "We trust that you will work with EPA to ensure close cooperation between USDA and EPA in providing for the continued use of pesticides in a prudent, environmentally-safe and effective manner."

The Washington Office Legislative Affairs staff will track this development

CONTACT: MIT PARSON

FTS 447-9345

PUBLICATIONS OF INTEREST

The 1989 ASTM Directory of (Toxicology) Testing Laboratories, \$50.00, 1916 Race Street, Philadelphia, PA 19103; (215) 299-5400.

Risk Assessment Guidelines and Information Directory, \$56.00, Government Institutes, Inc., 966 Hungerford Dr. #24, Rockville, MD 20850; (301) 251-9250.

Dictionary of Toxicology, \$82.50, E. Hodgson, Houndsmills, Basingstoke, Hampshire R621 2XS, U.K.

Health and Environment Digest (Newsletter). For free complimentary copy, write or call: Health and Environment Digest, 2500 Shadywood Road, Box 90, Navarre, MN 55392, (612) 471-9292.

New Developments in Biotechnology--U.S. Investment in Biotechnology, \$13.00, Office of Technology Assessment--U.S. Government Printing Office, Dept. SSMC, Washington, DC 20402.

World Directory of Pesticide Organizations, \$56.00, G. Ekstrom and H. Kidd, editors, Swedish National Food Administration and British Royal Society of Chemistry. Contact: The Distribution Centre, Royal Society of Chemistry, Blackhorse Rd., Letchworth, Herts, SG6 1HN, U.K.

Rational Pesticide Use, \$49.50, K.J. Brent and R.K. Atkin, eds., Cambridge University Press, New York, N.Y., 348 pp., illus.

HANDBOOK OF ENVIRONMENTAL FATE AND EXPOSURE DATA

A 7-volume series of publications on the environmental fate of organic chemicals is due for release in May by Lewis Publishers, Inc. Volume 1 will cover "Large Production and Priority Pollutants." Pesticides and other chemicals will be covered in subsequent volumes (2 per year). Each volume will spell out in detail how individual chemicals behave in the environment and how humans and other organisms are exposed during their production, use, transport, and disposal. Cost savings of up to 20% may be realized by ordering the series rather than individual volumes. If interested

CONTACT: LEWIS PUBLISHERS, INC.

1-800-525-7894

AG AVIATION SYMPOSIUM POSTPONED

The Agriculture and Forestry Aviation Symposium originally scheduled for October 2-6 (See "Short Subjects...", Issue No. 89-1, p.6) has been postponed for 12 months. Canada's National Research Council regrets any inconveniences caused by the postponement. For rescheduling plans

CONTACT: JACK BARRY

(916) 758-4600

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BIO-CONTROL IN HAWAII

In an effort to find suitable alternatives to the use of herbicides, the Hawaii Department of Agriculture last November released hundreds of moths in an attempt to slow the spread of gorse--a spiny plant pest that has infested thousands of acres on the island of Hawaii.

The release of the moth (Agonopterix ulicetella) on Mauna Kea, culminated several years' research by entomologist George Markin of the Forest Management Research in Hawaii unit. Markin's studies demonstrated that the moth, a gorse defoliator, would not adversely affect native Hawaiian vegetation. He conducted similar research in 1986 that resulted in the release of a different moth against another plant pest--the banana poka.

For additional information on bio-control in Hawaii

CONTACT: GEORGE MARKIN

(809) 541-2628

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

TWO NEW PESTS REPORTED

Two new pests, one insect and one disease, are affecting forest trees in the United States. If problems persist, pesticide-use may be needed.

Dogwood anthracnose is a disease caused by a newly identified fungus in the genus *Discula*. Initial symptoms are small, purple-rimmed leaf spots or larger tan blotches that may enlarge to kill the entire leaf. Infected leaves often cling to stems after normal leaf fall. The fungus can also infect twigs, killing them back several inches, and in some cases to the main stem, which can also develop cankers. Trees are often killed 2 to 3 years after first attack.

Dogwood anthracnose affects flowering and Pacific dogwood in the East and Pacific Northwest respectively. The disease is favored by cool, wet spring and fall weather, but it can occur throughout the growing season.

Dogwoods receiving good cultural care are better able to withstand anthracnose attacks; however, high-value trees may need protection with fungicides. Chlorothalonil, mancozeb, and benomyl are suitable alternatives.

Pear thrips is an insect that was accidentally introduced into California in 1904 and now occurs nationwide. Although pear thrips favor fruit trees, they are also becoming a problem in hardwood forests where they infest maples, birches, ash, black cherry, and beech. The pear thrips is a very small, slender, brown insect that feeds on developing plant buds in the spring. Symptoms of attack include fallen green leaves, small leaf size, chlorosis, and leaf wrinkling. Growth decline and crown dieback are longer-term symptoms of infestation.

Concerns about pear thrips focus on the fact that they are infesting sugar bushes in the northeast where maple syrup production is important to the economy. In situations where sugar bushes need to be protected, it may be necessary to implement direct control action. Although no pesticides are currently registered and/or proven effective for this purpose, carbaryl is under evaluation.

For followup information on these pests

CONTACT: NORTHEASTERN AREA OFFICE
SOUTHEASTERN REGIONAL OFFICE

FTS: 489-3153
FTS: 257-2989

HEXAZINONE FACT SHEET

A new chemical fact sheet (No. 183) has been published by the U.S. Environmental Protection Agency. The 8-page summary provides data on use patterns and formulations, chemical characteristics, EPA regulatory position, and data gaps for this herbicide. Anyone interested in receiving a copy of the hexazinone fact sheet should

CONTACT: DENNIS R. HAMEL

FTS 235-8209

PESTICIDES AND CHILDREN

On February 27 the Natural Resources Defense Council (NRDC) released a report entitled "Intolerable Risk: Pesticides in Our Children's Food." The report discusses the potential exposure of children to seven pesticides that NRDC believes pose the greatest risk to children. The pesticides evaluated were daminozide, mancozeb, captan, methamidophos, parathion, methyl parathion, and diazinon. In a quote from the report, NRDC says

"The average preschooler suffers 500% more total exposure than an adult to the pesticides analyzed. An estimated 11,000 to 15,000 of current population of American preschoolers may eventually get cancer solely as a result of their exposure before the age of five to these pesticides in fruits and vegetables. This translates into one child out of every 1,500 to 2,000. Large numbers of young children (up to almost the entire preschool population) are being exposed to neurotoxic pesticides, which can harm the brain and nervous system, at levels above what the Federal government calls safe..."

Thus, the report counters the claims of the Food and Drug Administration which published the results of surveys done in 1987 and 1988 that indicated that there is no compelling reason to believe that the U.S. food supply is being adversely impacted by pesticides (See "Short Subjects...", Issue No. 88-16, December 9, 1988). In spite of this, NRDC believes: (1) that EPA, the agency entrusted to establish safe limits for pesticides in food, should immediately revise its pesticide limits to ensure that children are protected from dangerous exposures, (2) that, FDA, the agency which is responsible for enforcing the pesticide limits, should greatly improve its ability to detect the residues that remain on food and to stop the sale of foods which contain dangerous levels of pesticide residues, and (3) that the Department of Agriculture should ensure that growers have incentives to minimize pesticide use and to use farming methods which do not rely on dangerous pesticides. Although these actions cannot guarantee safe food overnight, NRDC believes they must be taken to restore public confidence in the safety of our food.

The report also recommends that consumers should reduce exposure by "carefully washing and peeling produce, eating domestically-grown fruits and vegetables which are in season, and seeking out foods grown by farmers using 'organic' and 'integrated pest management' techniques."

For followup

CONTACT: ZDENKA HORAKOVA

FTS 235-8209

CORRECTION

In Issue No. 88-3 of "Short Subjects..." you were given an incorrect telephone number for Pat Shea. Pat's correct FTS number is 449-3217. His DG address is S27A. Please make the necessary changes on your "List of Forest Service Personnel Involved with Pesticides."

WEED WORKSHOP

From February 14-17, forty-five people attended a noxious weed coordination workshop in Billings, Montana. In attendance were representatives from 11 Federal agencies, 7 State Departments of Agriculture, 1 Canadian Province, 2 Universities, and others.

The purpose of the workshop was to strengthen coordination and cooperation among Federal, State, and Canadian agencies. There was strong commitment on the part of the workshop attendees to strengthen cooperation, heighten awareness, and promote education about noxious weed management alternatives. Among the action items agreed to by workshop attendees were: (1) Complete the USDA noxious weed policy statement, (2) initiate the development of noxious weed policy statements for the Department of Defense and the U.S. Department of the Interior, (3) develop a "weed buster" action group to prepare funding initiatives, (4) conduct another workshop in June, 1990 in Utah (ARS lead), (5) coordinate a Canadian/American initiative to catalog appropriate weed management technology, cooperative efforts, etc., and (6) continue a coalition to coordinate/strengthen cooperative weed management activities (FS lead).

For followup

CONTACT: MAX OLLIEU

FTS 235-8209

NOXIOUS WEED NEWSLETTER

In January, Dow Chemical, U.S.A., initiated a new newsletter for information exchange among noxious weed control professionals. Entitled **TechLine**, the newsletter intends to supply information on noxious weed control alternatives and provide a forum for discussion of topics related to technical information, product registration, and exchange of ideas.

The editors of **TechLine** encourage participation by having interested persons ask questions, discuss on-going research, and describing noxious weed control successes.

If you have questions about **TechLine**

CONTACT: TECHLINE

(406) 652-4977

NEWSLETTER INPUT

Anyone having items of interest to share with other pesticide users are encouraged to submit items for inclusion in future issues of "**Short Subjects...**"

CONTACT: DENNIS R. HAMEL
EDITOR

FTS: 235-8209
DG: D.HAMEL:W01A

REGION 5 VEGETATION MANAGEMENT EIS RELEASED

On February 27, the Pacific Southwest Region (R-5) released their Final Environmental Impact Statement and Record of Decision (ROD) on vegetation management for reforestation. The ROD concerns the key elements of determining how best to control the growth of brush and other plants that hinder Forest Service efforts to replant forests after fires or timber harvest. Under the selected policy: (1) the decisionmaking authority for selecting a specific treatment is delegated to the local land manager, (2) all methods of controlling competing vegetation including herbicides must be considered by the local manager, (3) herbicides will be used only where they are determined to be essential to achieve resource management objectives, and (4) mitigation measures will be used to reduce risk to human health and the environment.

According to Regional personnel, decisions based on the EIS should result in a balanced program. It is estimated that under the program approximately 55,000 acres will be treated manually, 51,000 chemically (i.e., with herbicides), 50,000 through mechanical methods, 45,000 acres by thermal (controlled burning) methods, and 3,000 acres biologically (i.e., cattle and sheep grazing).

Additional information on the EIS and/or vegetation management in California can be obtained from the Silviculture and Timber Management Plans and Inventories Staff in R-5

CONTACT: MIKE SRAGO

FTS 556-2563

PESTICIDE REGISTRATION CONSULTANT SELECTED

The Washington Office, Forest Pest Management staff recently received approval to contract with a pesticide registration consultant to assist the Forest Service in clearing up a backlog of issues relating to forestry-use pesticides. The agency requested proposals from persons/organizations in this field and received five proposals. These were evaluated using a specific set of criteria. It was determined that agency needs could best be met by contracting with John Kennedy Consultants, Inc. of Laurel, Maryland.

John Kennedy, president of Kennedy Consultants, has extensive experience in working on pesticide registration issues. Before establishing his own consulting firm, Kennedy was with the Animal and Plant Health Inspection Service (APHIS) for 9 years. While with APHIS, Kennedy worked on gypsy moth eradication and Bacillus thuringiensis, virus and other pesticide use. Under the Forest Service contract, Kennedy will assist in the areas of: (1) registration of methyleyclohexenone (MCH), (2) changes to the strychnine label, (3) modifications of the diflubenzuron label, (4) data-gap filling on the nucleopolyhedrosis viruses, (5) monitoring new developments in the field of bio-engineering, and (6) assisting in the review and evaluation of pesticide related documents such as EIS's, risk assessments, and agency directives.

Kennedy may occasionally have a need to contact field personnel about FS pesticide-use activities. If there are questions

CONTACT: DENNIS R. HAMEL

FTS 235-8209

SECOND NATIONAL PESTICIDE MANAGEMENT COURSE COMPLETED

Sixty-four students and thirty-five faculty members participated in the second National Advanced Pesticide Management Training Course at Marana, AZ, February 21 through March 2, 1989. Participants in the course represented EPA, BLM, USAF, USDA-APHIS, USDA Extension Service; cooperators from five states; and all three organizational functions of the FS - Research, NFS, and S&PF. Attendees heard Allan J. West, Deputy Chief for State & Private Forestry (S&PF), deliver a welcoming address that emphasized the role of S&PF in providing training and technology transfer to improve the safe and efficient use of pesticides.

The course, a combination of lectures, special speakers, panel discussions, optional evening sessions, field exercises, and student group presentations, was the second national pesticide management course sponsored by S&PF. Highlights of the course were the insight provided by lively discussions of panelists representing the Northwest Coalition for Alternatives to Pesticides, Monsanto, and Forest Service on use of pesticides; and the outstanding presentations by student working groups on pesticide-use problemsolving. A new addition to the course program was optional (evening) hands-on training with the FSCBG and AGDISP aerial spray computer models. Approximately 30 students took advantage of this opportunity, some with specific spray project needs such as "How much drift will result if I use this aircraft, nozzle, and...."

Critiques of both students and faculty were positive and included several suggestions for course enhancement. Students and faculty gave high marks to quality of instruction, the panel on the discussion of the National Environmental Policy Act (NEPA), the student work group scenario exercise, and the optional evening sessions. A course Steering Committee plans to meet in May to critique the 1989 course and design the 1991 course, which needs some revision to incorporate changing technology and user needs.

For further information about this year's course or plans for the next course

CONTACT: Jack Barry (916)758-4600/FTS 460-1715
DG J.Barry:SCS06

Max Ollieu (703)235-8209/FTS 235-8209
DG M.Ollieu:W01A

END

SHORT SUBJECTS
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APPALACHIAN INTEGRATED PEST MANAGEMENT EIS RELEASED

On February 13, the USDA Forest Service filed its final "Appalachian Integrated Pest Management Program EIS" with the U.S. Environmental Protection Agency. The EIS analyzes six alternatives for the management of gypsy moth in West Virginia and Virginia. It includes discussions of the use of pheromones, inherited sterility, parasites and predators, mass trapping, and the use of nucleopolyhedrosis virus, Bacillus thuringiensis, and diflubenzuron as intervention alternatives. Copies of the EIS are available from R-8

CONTACT: DAVE SMITH

(404) 347-4338

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

PESTICIDE REGISTRATION MAINTENANCE

The 1988 Amendments to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) were signed October 25, 1988, and became effective December 24, 1988. Among the amendments was provision for the establishment of an annual pesticide registration maintenance fee to be paid to the U.S. Environmental Protection Agency (EPA) under Sections 3 and 24(c) of FIFRA. Provisions were not made to exclude other Federal agencies from the amendment or the payments.

In a January 31, 1989, letter to all registrants, including the USDA Forest Service, EPA set the maintenance fees for 1989 at \$425 per product, due March 1, 1989. Pursuant to EPA's request, the Forest Service will pay to maintain the Federal registration (FIFRA Section 3) for the nucleopolyhedrosis viruses of the Douglas-fir tussock moth, the gypsy moth, and the pine sawfly. However, the Washington Office does not have access to information on pesticides that field units have registered for Special Local Needs (SLN) under FIFRA Section 24(c) in individual States. Therefore, it is the responsibility of Regions, Stations, and the Area to identify any product(s) for which they wish to maintain these registrations. For followup

CONTACT: EPA (OFFICE OF PESTICIDE PROGRAMS)	1-800-444-7255
MAX OLLIEU (FOREST SERVICE)	FTS 235-8209

ENDANGERED SPECIES PROTECTION

EPA's Endangered Species Protection Program has been the focus of an Interagency Technical Group that meets regularly. One output from these meetings will be the publication of EPA's revised program in the Federal Register in early March. At that time, it is expected that EPA will eliminate the cluster approach for considering pesticide hazards. Instead the agency will take advantage of the work done on the four original clusters, then work backwards looking at label rates, application methodology, and environmental fate. If a pesticide does not exceed biological levels of concern, there will be no restrictions placed on it. USDA has reviewed the draft notices twice and submitted comments. In addition, the Forest Service has been distributing habitat maps for review. The first package of maps was sent to affected field units in December and the second in February. A third package is expected to be mailed in April.

For further information on this program

CONTACT: SHELLY WITT	FTS 235-8209
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STUDY FINDS NO LINK BETWEEN CANCER RISK AND DDT EXPOSURE

A study that spanned a decade in the lives of nearly 1,000 people has found no statistically significant link between the amount of DDT in their bodies and risk of death by cancer. The study, reported in the American Journal of Public Health, was supported in part by the National Cancer Institute and Olin Corp.

NEW TECHNOLOGY TRANSFER AGREEMENT SIGNED

On February 13, the Deputy Chiefs for Research and State and Private Forestry signed a technology transfer (T²) agreement with Burlington Bio-Medical and Scientific Corporation, of Farmingdale, New York. The purpose of the T² agreement is to establish cooperative efforts designed to register methylcyclohexenone (MCH) and move its further development to the private sector.

The USDA Forest Service identified, isolated, and synthesized MCH, the antiaggregating pheromone of the Douglas-fir beetle in the early 1970's. In 1986 the agency sought registration of the product as a pesticide with the U.S. Environmental Protection Agency; however, additional data was needed. The Forest Service subsequently determined that it had insufficient personnel and financial resources to comply with EPA's requirements, therefore, the agency sought interest from the private sector. The current T² agreement is the result of an evaluation of proposals responding to the Forest Service need and offered in support of the Stevenson-Wydler Technology Transfer Act (PL 99-502).

Burlington Scientific Corporation has been involved in recent state-of-the-art developments with chemicals and their deployment. They are currently the registrant of Ro-PelTM, an animal repellent. They also have a dozen additional products awaiting registration with EPA.

Under the terms of the T² agreement signed February 13, Burlington will: determine the feasibility of commercially producing MCH; conduct research required by EPA; and produce MCH for use by the Forest Service in pilot tests. In return the Forest Service will provide the firm exclusive right to all information on MCH until December 31, 1990.

For additional information on this agreement

CONTACT: DENNIS R. HAMEL

(703) 235-8209

EPA PLANS STUDY OF PESTICIDE USE IN HOMES

In a followup to a pilot survey done in 1980, EPA intends to do a national survey of between 2,500 and 3,000 homes to determine the amount of pesticide use in homes and how unused material is disposed of. Edward Grant, Economic Analysis Branch, Office of Pesticide Programs, says that the study will be conducted in April and July, and, will try to get a usable database by the end of the year and a final report on the survey is expected by March of next year. Grant says researchers from Research Triangle Institute will go into areas of high and low density living to help gather data on household pesticide use which he characterizes as "skimpy." For followup

CONTACT: EPA (OPP)

(703) 557-7090

JOINT PEST MEETING PLANNED

The Northeastern Forest Insect Work Conference and the Northeastern Forest Pathology Workshop have scheduled a joint meeting to be held at the Tara Hyannis Hotel, Hyannis, Massachusetts, April 3-5, 1989. The program will include presentations on: The pear thrips, the gypsy moth, turpentine beetles, and armillaria root disease. A special presentation on "Cape Ecology" will be presented by Dr. William Paterson, Department of Forestry and Wildlife Management, Amherst, Massachusetts.

For registration information

CONTACT: KATHY MCMANUS (203) 773-2021

"RIGHT-TO-KNOW" VIDEOTAPE AVAILABLE

A firm called M² Ltd. recently released a videotape that Federal agency personnel may find useful in complying with the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard. The law is generically known as the "Worker-Right-to-Know" law and the 20-minute videotape describes the responsibilities of manufacturers, employers, and employees who have hazardous chemical (including pesticides) work responsibilities. The tape focuses on the use of Material Safety Data Sheets (MSDS), which is also the method the Forest Service has chosen to inform employees about hazardous materials. Copies of the videotape are available for about \$129.00

CONTACT: M² LTD. (301) 977-4281

GRASSHOPPER FIELD GUIDE

In support of the Grasshopper Integrated Pest Management Project of the Animal and Plant Health Inspection Service, a "Field Guide to Common Western Grasshoppers" (Bulletin 192) has been initiated. The authors of the guide intend to provide users with a practical means of identifying more than 75 common grasshoppers that can be pests in the West. The series of information brochures was kicked off with the publication of one for the migratory grasshopper (Melanoplus sanguinipes (Fabricius)). Additional "guides" will be published periodically for insertion into the 3-ring binder provided.

For additional information on the series

CONTACT: ROBERT E. PFADT
WYOMING AGRICULTURAL EXPERIMENT STATION
LARAMIE, WYOMING 82071

BUSINESS BRIEF

BIOSAFE, a biological insecticide, is to be introduced this spring by Biosys of Palo Alto, California. The product is made of beneficial nematodes that destroy soil-borne insect pests of gardens, lawns, and potted plants.

EPA ISSUES INTERIM REPORT ON PESTICIDES IN GROUNDWATER

EPA recently released an interim report, "Pesticides in Groundwater Data Base," which summarizes available data on detections of pesticides in groundwater. Not to be confused with the National Pesticide Survey of Drinking Water Wells, the recently-released report compiles data from approximately 150 groundwater monitoring studies carried out over the past 10 years by pesticide registrants, universities, and government agencies throughout the country.

The findings of the interim report include:

- Normal agricultural use has apparently led to residues of 46 different pesticides in the groundwater of 26 States.
- A total of 74 pesticides have been detected in the groundwater of 38 States from all sources, including normal agricultural use, accidental spills, residues from mixing, loading, and disposal of pesticides, back siphoning into wells during irrigation, etc.
- Most of the pesticide concentrations detected in groundwater were at low levels, with median levels generally below EPA's health advisory levels for these pesticides.

The interim report points to the potentially wide-ranging presence of pesticides at low levels in groundwater. However, the results do not offer a comprehensive picture of the severity of the problem of pesticides in drinking water on a nationwide basis. Many agricultural areas were not sampled by these studies and are consequently not statistically represented in the results. In addition, some of the studies included in the interim report were not limited to wells used for drinking water supplies but included shallow monitoring wells and wells used only for irrigation.

The results of the National Pesticide Survey of Drinking Water Wells, scheduled for completion in 1990, are expected to meet the need for a statistically representative estimate of pesticide contamination of drinking water wells on a nationwide scale. The Survey will test 1,350 community and domestic wells for over 100 pesticides and breakdown products.

Full copies of the interim report are available from the EPA Public Information Center

CONTACT: EPA

(202) 475-7751

PESTICIDE BUSINESS BRIEF

Grace Horticultural Products, Cambridge, Massachusetts, a unit of Grace Specialty Chemicals, has acquired the rights to a natural insecticide extracted from seeds of the neem tree, a tropical evergreen (See "Short Subjects..." Issue No. 88-3). Under a purchase agreement with Vikwood Botanicals of Sheboygan, Wisconsin, Grace acquired all rights, including patents, trademarks, EPA registration, and technology for the product called Margosan-O.

HUMPBACKED HERBICIDES?

INSIGHT magazine (February 13, p. 24) reports that camels are finding their home on the range in a Department of Agriculture experiment to determine whether they can assist ranchers in clearing undesirable brush from pastureland in the southwest. As part of their ongoing efforts to improve the productivity of rangelands, scientists at the Department's Jornada Experimental Range near Las Cruces, New Mexico, have brought eight camels to the 193,000-acre station to see how effectively their foraging can clear nuisance plants such as mesquite and broom snakeweed that have displaced good grazing grasses.

Scientists hope the experiment will enhance the land for cattle grazing. The range condition of many areas in the arid southwest is so poor today that each cow needs grass from 200 to 600 acres of rangeland to survive for a year. Late in the past century, some ranchers were using only 60 acres per cow per year notes a Departmental publication. Since 1904, the government has used the Jornada Range to study the effects of overgrazing and to develop range management practices.

Other studies underway at Jornada include one that aims to make the pastureland more productive through multispecies grazing. Through the experiment, scientists hope to determine whether sheep and cattle, if brought together at a very young age, will form bonds that will keep them together in maturity.

CONTACT: USDA JORNADA EXPERIMENT STATION (505) 522-6166

A POTENTIAL PESTICIDE-USE SITUATION

Another item in INSIGHT (Feb. 13, p. 56) reports that "A wildlife preserve outside Denver is teeming with bubonic plague. The disease has already killed thousands of prairie dogs, but officials at the Rocky Mountain Arsenal say the outbreak has not gone beyond the boundaries of the 17,000-acre preserve. Such outbreaks are not unknown, says an Arsenal spokesman, with the region's last having occurred in 1975. As long as the plague is confined to the preserve, it poses no hazard to humans living outside its boundaries."

"Officials say they intend to let it run its course, with periodic checks on its progress." About one-third of the 50,000 to 100,000 prairie dogs that roam the Arsenal and serve as prey for carnivores have succumbed to the plague so far, but Arsenal officials say no other animals, with the exception of field mice, likely have been infected."

"The plague is carried by fleas that infect the rodents they infest. Arsenal officials first noticed a significant drop in the prairie dog population last fall and were able to identify the plague by isolating antibodies against the disease from coyotes that had eaten infected prairie dogs."

If it is determined that control is needed, it may be appropriate for Arsenal personnel to consider the use of innovative technology that was developed at Harvard University's School of Public Health whereby a product called *Damminix* is used to encourage flea-infested rodents to carry a permethrin-containing cotton ball back to its burrow where the insecticide kills the fleas.

SYMPOSIUM PROCEEDINGS AVAILABLE

Copies of the Proceedings of the "Symposium on the Aerial Application of Pesticides in Forestry," a meeting held in Ottawa, Canada, October 20-22, 1987 are available. The 387-page publication was edited by George W. Green, Canadian Forestry Service, and includes papers from five technical sessions, 19 invited speakers, numerous poster papers, and workshop discussions. The proceedings represent a significant addition to the literature available on aerial application technology. Copies are available at a cost of \$25.00

CONTACT: MR. KEN CHARBONNEAU
MONTREAL ROAD

NATIONAL RESEARCH COUNCIL OF CANADA
OTTAWA, CANADA, K1A 0R6

PACIFIC NORTHWEST HAS A NEW PESTICIDE SPECIALIST

The Pacific Northwest Region (R-6) has selected a new pesticide specialist, vice Mike Schafer. The new person to be assigned pesticide coordination responsibilities in the Region is Gary Smith. Gary is leaving his job as District Silviculturist on the Galice Ranger District, Siskiyou National Forest, to move to the Regional Office in Portland. Gary's reporting date is March 12. For followup

CONTACT: R-6

FTS 423-2727

EPA FACT SHEETS

Fact Sheets are scientifically valid summaries of specific pesticidal active ingredients prepared by the U.S. Environmental Protection Agency (EPA). They include a description of the chemical, use patterns and formulations, toxicological data on the pesticide, tolerances, and data gaps. EPA continuously updates its Fact Sheets and supplies them to interested persons. Currently there are 174 Fact Sheets available. Approximately 44 provide data on pesticides used in forestry. These include:

Picloram*	<u>Bacillus thuringiensis*</u>	Copper Sulphate*
Lindane*	Dicofol*	Coal Tar/Creosote
Dichlobenil*	Propanil	Dalapon*
Dicamba*	1,2 Dichloropropene*	2,4-D*
Naptalam*	Disulfoton*	Fensulfothion*
Fenaminosulf*	Naled*	Fluometuron
Dodine*	Methyl bromide*	Carbaryl*
Diazinon*	Trichlorfon*	Azinphos-methyl*
Chlorpyrifos*	Oxydemeton-methyl*	Thiram*
Simazine*	Captafol*	Chlorothalonil*
Dichlorvos	Carbofuran*	Cyhexatin
Acephate*	Tebuthiuron*	Fenitrothion*
Amitraz	Asulam*	Diflubenzuron*
Fenvalerate*	Metalaxyl	Imazapyr*

The asterisked active ingredients are ones for which the Washington Office has current Fact Sheets. If you wish copies

CONTACT: DENNIS R. HAMEL

(703) 235-8209

UPDATED LIST OF FOREST SERVICE PERSONNEL INVOLVED WITH PESTICIDES

In addition to changes in R-6 (see item on page 7), several other field units have made changes in addresses, telephone numbers, and personnel, therefore, the following updated list identifies Forest Service personnel involved with pesticides. Any changes should be brought to the attention of the WO

CONTACT: DENNIS R. HAMEL

(703) 235-8209

<u>REGION</u>	<u>NAME</u>	<u>PHONE NUMBER</u>	<u>ADDRESS</u>	<u>DG</u>
1	Ed Monnig	585-3134	Federal Building P.O. Box 7669 Missoula, Mt. 59801	:R01A
2	Dave Johnson	776-9541	Box 25127 Lakewood, Co. 80225	:R02A
3	Jesus Cota	476-3288	Federal Building 517 Gold Ave., SW Albuquerque, NM 87102	:R03A
4	Garth Baxter	586-5258	Federal Building 324 25th St. Ogden, Ut 84401	:R04A
5	John Neisess	556-0112	630 Sansome St. San Francisco, Ca	:R05A
6	Gary Smith	423-2727	P.O. Box 3623 Portland, Or 97208	:R06A
8	Max Williamson (Herbicides)	257-2229	1720 Peachtree, NW Atlanta, Ga 30367	:R08A
	John W. Taylor (Insecticides)	257-2718	Ibid	
9	Larry Yarger	362-1899	310 W. Wisconsin Milwaukee, Wi 53203	:R09A
10	Andy Eglitis	8-907-586-8883	P.O. Box 21628 Juneau, Ak 99802	:R10A
NA	Charles Hatch	489-3169	370 Reed Road Broomall, Pa 19008	:S24A
<u>WASHINGTON OFFICE</u>				
WO	Max Ollieu Dennis Hamel Larry Gross Zdenka Horakova Shelly Witt	235-8209	P.O. Box 96090 Washington, DC 20090-6090	:W01A

Davis	Jack Barry Pat Skyler	460-1715	2121 C 2nd St. Davis, Ca 95616	:SCS06
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STATIONS

INT	Lynn Rasmussen	586-5393	Forestry Science 507 25th St. Ogden, Ut 84401	:S22A
NC	Dan Netzer	715-362-7474	Forestry Science Box 898 Rhineland, Wi 54501	:R09F06A
NE	Jack Barger	975-9206	Forestry Science 359 Main Rd. Delaware, Oh 43015	:S24L05A
PNW	Gary Daterman	420-4331	Forestry Science 3200 Jefferson Way Corvallis, Or 97331	:S26L05A
PSW	Pat Shea	449-3277	P.O. Box 245 Berkeley, Ca 94701	:S27A
RM	John Schmid	323-1100	240 W. Prospect Ft. Collins, Co 80526-2098	:S28A
SE	Gordon Lewis	672-0637	200 Weaver Blvd. P.O. Box 2680 Asheville, NC 28802	:S29A
SO	James Bell	682-6712	Post Office Bldg. 701 Loyola Ave. New Orleans, La 70113	:S30A
FPL	Tom Jacobson	364-5723	Gifford Pinchot Dr. Madison, Wi 53705-2398	:S32A

FSCBG MODEL WORKSHOP

The USDA Forest Service recently sponsored its first FSCBG workshop at Oregon State University. The FSCBG model simulates aerial application of pesticides. The one week session provided hands-on training on how to use the FSCBG model to plan and conduct aerial application of pesticides. This model can be used to predict pesticide swath width, coverage, deposition and drift for any combination of application and field spray conditions. There are limitations to the program, such as topography changes, but these will be dealt with in the next update. Students were given a brief introduction to pesticide application, including spray physics, and then introduced to FSCBG through a series of real world exercises and case studies. Each student was required to make several runs using data from a sample project they brought to the session. The entire group discussed the outputs from these examples and learned how the model can be used to improve spray operations.

Workshop instructors were: Brian Cleary (Course Director, Oregon State University, Corvallis, OR), Tom Curbishley (Continuum Dynamics, Inc., Princeton, NJ), Logan Norris (Oregon State University, Corvallis, OR), Pat Skyler (USDA Forest Service, Forest Pest Management, Davis, CA), Milt Teske (Continuum Dynamics, Inc., Princeton, NJ), and Jack Barry (USDA Forest Service, Forest Pest Management, Davis, CA). Future workshops are tentatively scheduled for: Corvallis - Spring 1989; Northeast - Fall 1989; Southeast - January 1990; and California - February 1990.

For student reaction to the course contact:

Joe Sherlock	Mi-Wok R.D. Stanislaus NF	R05F16D51A	(209)586-3234
Jose Negron	FPM/Pineville	R08F06A	(318)473-7290
Jim Hadfield	FPM/R6	R06A	(503)326-2727
Katharine Sheehan			FTS 423-2727
Tim McConnell			
Shelly Witt	FPM/WO	W01A	(703)235-8209 FTS 235-8209
Ross MacFarlane	FPM/Morgantown	S24L08A	(304)291-4133 FTS 923-4133
Harold Flake	FPM/Asheville	S29A	(704)257-4321
Larry Barber			

For additional information on FSCBG

CONTACT: Jack Barry or Pat Skyler	FTS 460-1715
2121 C Second Street	
Davis, California 95616	

END

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PESTICIDE CERTIFICATION AND TRAINING GUIDELINES TO BE UPDATED

The U.S. Environmental Protection Agency (EPA) plans to issue a revised draft of 40 CFR 171, Certification of Pesticide Applicator Regulations, in 1989. By way of a "Notice of Proposed Rulemaking" in the **Federal Register**, EPA intends to solicit review and comment on changes that include additional private and commercial applicator subcategories, standards of competency, specialty categories, a 3-year recertification requirement, and levels of supervision. In the latter instance, EPA is proposing to establish three levels of supervision: (1) use only by a certified applicator, (2) direct supervision by a certified applicator who is required to be on site and within 5 minutes of the noncertified applicator, and (3) direct supervision by a certified applicator who is not required to be on site.

These changes primarily affect State plans since on August 19, 1977 EPA permitted Federal agencies to develop separate certification plans for restricted-use pesticide applicators involved with official duties. USDA has such a plan and since it adopted a three-year recertification period this new requirement will have no impact. For additional information

CONTACT: DENNIS R. HAMEL

(703) 235-8209

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

FOREST DEFOLIATOR CONTROL IN 1989

Plans are being made by the USDA Forest Service to evaluate several new microbial pesticides that have the potential for forest defoliator control. In 1989, three general areas will be involved. In the Pacific Northwest (R-6) the western spruce budworm (WSBW) continues to be of concern. In California (R-5) there is an infestation of the Douglas-fir tussock moth (DFTM). And, of course the gypsy moth (GM) continues unabated in the East.

Western spruce budworm: R-6 reports that about 2.8 million acres were defoliated by the WSBW in 1988. Approximately 650,000 acres of this are currently being evaluated for control in an environmental assessment. Final decisions will be made later; however, three National Forests have populations that may qualify for treatment in 1989. Included are the Mt. Hood (10,000 acres), the Umatilla (62,000 acres), and the Wallowa-Whitman (302,000 acres) National Forests. Field tests, pilot projects, and operational suppression projects are all likely in 1989. For example, a new product (Ecogen's **Condor**) containing a new strain of Bacillus thuringiensis (Bt) will be field tested by researchers from the Pacific Northwest Forest and Range Experiment Station. In addition, Novo's **Foray 48B** product is likely to be evaluated in a cooperative field/pilot test depending on the availability and adequacy of test sites. These new products, along with Abbott's **Dipel** products and Sandoz's **Thuricide** products, which were pilot tested in R-6 in 1988, should provide the Forest Service with a range of alternatives for use in future WSBW suppression programs.

Douglas-fir tussock moth: The Pacific Southwest Region reports an infestation of DFTM on about 105,000 acres of the Lassen and Plumas National Forests. The Region plans to treat in 1989 using a Bt product. In addition, the Region is trying to obtain full registration of the DFTM nucleopolyhedrosis virus in California; however, additional data is needed, therefore the product will probably not be used in that State this year.

Gypsy moth: Infestations of the gypsy moth will be treated in cooperation with various States in 1989. Registered products containing Bacillus thuringiensis will be used operationally in most areas; however, diflubenzuron (**Dimilin**) will also be used. Forest Service field tests of new products will be coordinated by the Northeastern Forest Experiment Station and done in cooperation with the Appalachian Integrated Pest Management program (AIPM). First priority field tests will be directed at low level gypsy moth populations using Sandoz's **San 415** (NRD-12 strain) Bt formulation. In addition, there will be tests of Novo's **Foray 48B** and Ecogen's **Condor** against high level populations. The AIPM program will also continue to evaluate the FS-registered nucleopolyhedrosis virus--**Gypchek**.

For additional information on 1989 field and/or pilot tests

CONTACT: MAX OLLIEU	(703) 235-8209
FOREST PEST MGT.	FTS: 235-8209

ADVISORY MEMORANDUMS

The Washington Office recently distributed several publications of interest to pesticide users in its Advisory Memorandum series. For example, on January 17, Advisory Memorandum No. 436 was distributed. It included two articles. The first was from the **Journal of Environmental Health** and dealt with the effectiveness of various kinds of protective clothing as barriers to dermal exposure from pesticides. The paper concluded that normal work clothes can be effective barriers to certain pesticides.

The second article was from **Nature** and provided commentary on the usefulness (or lack) of extrapolating from laboratory rodent tests to humans.

Advisory Memorandum No. 437 includes a copy of an article from the journal **Fundamental and Applied Toxicology**. It reevaluates current evidence on whether or not the phenoxy herbicides are carcinogenic to humans. The bottom line, as reported in the paper, is that "the total weight of evidence currently available does not support a conclusion that the phenoxy herbicides present a carcinogenic hazard to humans."

These are important subjects and conclusions and should be used in future discussions of pesticide use in forestry. For followup

CONTACT: ZDENDKA HORAKOVA

(703) 235-8209

R-6 VEGETATION MANAGEMENT EIS BACK IN COURT

On March 3, 1984, the District Court of Oregon issued an injunction against the use of herbicides in the Pacific Northwest Region (R-6) of the USDA Forest Service (FS) and on Bureau of Land Management lands in Oregon. The judgement was based on the failure of the agencies to do adequate worst case analyses in accordance with the requirements of the National Environmental Policy Act. The FS in response to the judgement prepared an extensive environmental impact statement (EIS) that includes an assessment of the risk to human health.

Copies of the EIS and a motion to dissolve the injunction were filed with the court on January 25 by the U.S. Department of Justice (Allan Brock) on behalf of the FS. Plaintiffs in the case (Northwest Coalition for Alternatives to Pesticides, Oregon Environmental Council, and the Portland Audubon Society) and intervenors (Oregonians for Food and Shelter) have ten days to respond to the motion. In addition, the FS administrative appeals process (36 CFR 211.18) is in effect and nine formal Notices of Appeal have been received by the agency. Therefore, it appears that it will still be some time before there is resolution of all of the issues surrounding vegetation management in R-6.

For a status report

CONTACT: MIKE FERRIS

FTS 326-7700

NEW FINAL RULE ON APPEALS

Effective February 22, 1989, the USDA Forest Service (FS) will implement a new Final Rule on its process for "Appeal of Decisions Concerning the National Forest System," (See January 23, Federal Register (Vol. 54, No. 13)). All decisions made by Forest Service officials concerning the management of National Forest System (NFS) land (including decisions on whether or not to use pesticides) are appealable. The agency's previous administrative appeal regulations were in 36 CFR 211.18; however, the new Final Rule splits the administrative review of decisions into two distinct processes. One part (36 CFR 251) will be limited to appeal of occupancy and NFS land-use decisions; the other (36 CFR 217) is for appeal of land and resource management plans, projects, and activities. The new rule results from a comprehensive review of agency policy on appeals and is intended to simplify the process and procedures to make them commensurate with the nature of decisions being disputed.

For additional information on the new appeal regulations

CONTACT: KATHIE HAUSER

(202) 382-9346

PESTICIDE RESEARCH CONFERENCE PLANNED

A national research conference entitled "Pesticides in Terrestrial and Aquatic Environments" will be held May 11-12, 1989 in Richmond, Virginia. The conference, which is sponsored by the Virginia Water Resources Research Center at Virginia Polytechnic Institute and State University, Freshwater Foundation, and Water Pollution Control Federation, will bring together researchers from across the United States and Canada. According to the conference steering committee chair, Dr. Tamim Younos of the Virginia Water Resources Research Center, researchers from 23 States, the District of Columbia, and Canada will present papers on pesticide monitoring in surface and groundwaters; ecological effects and bioassay tests; pesticide degradation in soils; database development, management, and use; pesticide waste treatment; analytical methods; toxic effects in agro-ecosystems; wildlife effects and monitoring; nonpoint source quantification; policies, economic impacts, and risks.

Registration fees are \$120 for general and \$60 for students. Late registration (after April 21) will be \$135. Fees include Conference Proceedings, Briefing Papers (abstracts), two lunches, coffee breaks, and an evening reception. The conference will be held at the Hyatt, Richmond, which will offer special rates for conference participants. For reservations call Hyatt (804) 285-1234.

For conference registration information

CONTACT: MS. BETH GIBSON
(703) 961-5624

VIRGINIA WATER RESOURCES RESEARCH CENTER
617 N. MAIN ST., BLACKSBURG, VIRGINIA 24060

FIFRA TO BE AMENDED AGAIN IN 1989?

A bill (HR 146) to amend the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) has been introduced by Congressman Craig (R-Id) for consideration by the 101st Congress. The bill, if passed, would amend FIFRA by permitting Federal agencies to use pesticides on public lands without duplicating the research or analyses already available to the Environmental Protection Agency.

Entitled, "Federal Pesticide Programs Improvement Act of 1989," the bill states that the EPA Administrator "shall publish guidelines specifying the kinds of information that would usually be required to support the registration of a pesticide and shall revise such guidelines from time to time."

If after publication more information is required, the "Administrator shall permit sufficient time for applicants to obtain such additional information, it said, adding, "Any Federal agency may proceed with the use of such pesticide unless the Administrator determines that missing or deficient data are sufficiently important to warrant a suspension or cancellation."

In setting guidelines for data requirements for the registration of pesticides with respect to minor uses and with respect to various types and classes of pesticides, the Administrator must make the guidelines "commensurate with the anticipated extent of use, pattern of use, and the level and degree of potential exposure to the pesticide," the bill said, adding:

"In the development of such guidelines, the Administrator shall consider the economic factors of potential national volume of use, extent of distribution and the impact of cost in meeting the guidelines on the incentives for any potential registrant to undertake the development of the required data."

According to the bill, analyses in support of registration are considered equivalent to an environmental impact statement and may be incorporated by reference and relied on by other Federal agencies to comply with the National Environmental Policy Act. The guidelines may "not contain a requirement for applicants to perform human epidemiological studies to obtain or support registration," it added.

The Administrator shall conduct research necessary to carry out the Act, as well as into integrated pest management in cooperation with the Secretary of Agriculture, the bill said. The Administrator must also ensure the research is not duplicative of any done by any other Federal agency, it stated.

Status reports on this bill may be obtained from the Legislative Affairs office

CONTACT: MIT PARSONS

FTS 447-9345

NEW 2,4-D PUBLICATION

Agriculture Canada recently released a new publication on 2,4-D. Entitled "An Economic Assessment of the Benefits of 2,4-D in Canada" the publication is available from

CONTACT: RON KRISTYNAK (AG CANADA)

(613) 995-5880

PESTICIDE BUSINESS BRIEFS

Dow Chemical to Keep its Name: After months of in-depth review, Dow Chemical Company has decided to keep its name. The company debated whether to drop the word "chemical" because of less than favorable perceptions of the word by the public. The company has used the Dow Chemical name since it was founded 92 years ago. Dow polled its employees, its customers, and the general public, among others, and worked with an image consultant to help make the decision.

Shell and Biopesticides: Shell Research, one of the British-based research companies in the Shell Group, will collaborate with Mycogen Corp., of San Diego, for developing and marketing biological insecticides based on Bacillus thuringiensis. Shell Research will invest \$3 million in Mycogen's bioinsecticide research, as well as provide expertise in insecticide evaluation, development, and marketing. Shell companies will have marketing rights for the resulting bioinsecticides outside North America, Japan, and Southeast Asia. Mycogen will retain commercial rights in North America.

ChemTek Partners to Provide Venture Capital: ChemTek Partners is a newly formed venture capital partnership that aims to provide startup capital for emerging specialty chemical companies. In addition, ChemTek plans to assist new businesses in research and development, marketing, production, and distribution. Parent companies of ChemTek are Battelle, the Columbus, Ohio-based contract research and consulting organization, and H.B. Fuller, the St. Paul, Minnesota, specialty chemical products company. ChemTek will soon be looking for interest from a broad spectrum of specialty chemical ventures.

If you know of a startup business in need of financing

CONTACT: CHEMTEK

COLUMBUS, OHIO

END

SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS

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REGION 5 PLANS TUSOCK MOTH CONTROL

The Pacific Southwest Region (R-5) is planning a Douglas-fir tussock moth (DFTM) suppression project in 1989. A DFTM infestation currently occurs on about 105,000 acres of the Plumas and Lassen National Forests.

It is likely that R-5 will use one of the biological insecticide products containing the bacterium Bacillus thuringiensis to control the DFTM since no other materials are currently registered for this use by the California Department of Food and Agriculture (CDFA).

Negotiations are underway with the CDFA to register the FS product **TM Biocontrol-1**, which contains the DFTM nucleopolyhedrosis virus, and other products at rates suitable to California conditions; however, California is requesting additional data and unless it is provided the products remain unregistered in that State.

For additional information

CONTACT: JOHN NEISESS

(405) 556-6520

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this biweekly, informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Dennis R. Hamel, Editor, USDA Forest Service, P.O. Box 96090 (204 RPD), Washington, D.C. 20090. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

GYPSY MOTH MEMORANDUM OF UNDERSTANDING UPDATED

On January 6, the USDA Forest Service (FS) and the Animal and Plant Health Inspection Service (APHIS) signed a new Memorandum of Understanding (MOU) on management of the gypsy moth. The agreement confirms the Department's role and provides direction to the agencies. The MOU takes effect in 1990 and the parties agree to cooperate fully and carry out the following responsibilities:

APHIS will:

1. Administer the regulatory program to prevent, retard, delay, or minimize artificial interstate spread from generally infested to non-infested areas.
2. Maintain survey and evaluation operations in cooperation with State agencies concerned with the spread of the insect from the regulated area.
3. Conduct surveys in cooperation with State agencies outside of the area known to be generally infested, in cooperation with other Federal agencies on other Federal lands outside the area known to be generally infested, and in cooperation with the Forest Service on National Forest System lands outside of the area known to be generally infested.
4. Conduct eradication projects, in cooperation with State agencies, on infested non-Federal lands covering 640 or fewer acres outside the area known to be generally infested and not contiguous with Federal land.
5. Conduct methods improvement to support all of the above.

The FOREST SERVICE will:

1. Conduct suppression projects (1) directly on National Forest System lands, (2) cooperatively with other Federal departments on other Federal lands, and (3) cooperatively with States on non-Federal lands within the generally infested area where projects are biologically sound, economically efficient, and where a Federal role has been established.
2. Conduct eradication projects, including delimiting surveys and post-treatment evaluations, (1) directly on National Forest System lands, (2) cooperatively with other Federal agencies on other Federal lands, (3) cooperatively with States on infested non-Federal land contiguous with infested Federal land, and (4) cooperatively with States on infested non-Federal land covering more than 640 contiguous acres outside the area known to be generally infested where projects are biologically sound, economically efficient, and National Environmental Policy Act requirements have been met.
3. Conduct surveys, directly on National Forest System lands, cooperatively with other Federal agencies on other Federal lands, and cooperatively with States on non-Federal lands, inside the area known to be generally infested.
4. Undertake methods improvement in support of all of the above.
5. Serve as the lead agency in preparing an environmental impact statement.

FIELD TESTING OF GENETICALLY-ENGINEERED ORGANISMS

Two reports on biotechnology and management of the risks of field testing genetically-engineered organisms have been released in recent months. One is a report by the General Accounting Office (GAO) to the Chairman, Subcommittee on Oversight and Investigations Committee on Energy and Commerce, House of Representatives. This report contains recommendations to the Administrator of the Environmental Protection Agency (EPA) and the Secretary of Agriculture (USDA), and the Food and Drug Administration (FDA) on ways to improve regulatory coverage of field testing genetically-engineered organisms.

A related item from EPA is a proposed **Federal Register** notice that when published, commented on, and approved will update EPA policy on experimental use permits and their relationship to field tests of genetically engineered organisms.

GAO REPORT:

The GAO report is the second on the subject of biotechnology and its purpose was to (1) evaluate the scope of regulatory policies applicable to deliberate small scale releases, (2) review the administration procedures for implementing these policies, (3) identify technical methods available to control and monitor risks posed by field testing. The report concludes that since USDA, EPA, and FDA have limited experience with genetically-engineered organisms they should make modifications to agency policies. To review the GAO comments or to obtain a copy of the report

CONTACT: GENERAL ACCOUNTING OFFICE (202) 275-6241

EPA FEDERAL REGISTER NOTICE:

Consistent with the recommendations made by GAO, the U. S. Environmental Protection Agency (EPA) believes that because certain microbial pesticides may pose potential risks when used in small-scale tests, such tests should not proceed without EPA review. Accordingly, EPA is proposing a rule that would amend the agency's experimental-use permit regulations and require notification of planned field tests of genetically-engineered organisms.

For additional information

CONTACT: AMY RISPIN (703) 557-8127

BIOTECHNOLOGY NOTES

USDA's Office of Agricultural Biotechnology (OAB) has initiated the writing and distribution of a biotech newsletter called **Biotechnology Notes**. The newsletter is a compilation of agency activities.

To be placed on the newsletter mailing list

CONTACT: MARTI ASNER (202) 447-9165

PESTICIDES IN GROUNDWATER

A soon-to-be-released report by the U.S. Environmental Protection Agency (EPA) indicates that normal agricultural uses, not point-source pollution, are responsible for the majority of groundwater contamination situations in the U.S.

The report, which showed findings of 77 pesticides in groundwater in 39 states is intended to be used by EPA to develop a database for pesticide reregistration by helping to identify: priority pesticides, origins of contamination, vulnerable areas, data gaps, and no-problem pesticides.

Copies of the report will soon be available from EPA

CONTACT: EPA PUBLIC INFORMATION CENTER (202) 475-7751

PESTICIDE USE NO, NO

Recent amendments to the National Forest System Drug Control Act of 1986 have occurred as a result of the Omnibus Drug Control Act signed by President Reagan November 18, 1988. One of these changes affects the use of certain pesticides that may be used for controlling vegetation that interferes with the successful growth and harvest of marijuana on Forest Service-administered lands. For example,

- A new subsection (6) is added to Section 401 (b) of the Controlled Substances Act which makes unlawful the use or attempted use of poisons, chemicals, or other hazardous substances on Federal lands while manufacturing, distributing, or dispensing controlled substances on Federal Lands. This law is aimed at the use of bulk fertilizers and rodenticides at marijuana cultivation sites and the use or disposal of hazardous chemicals associated with clandestine laboratories on Federal Lands.
- Section 516 of the Controlled Substances Act is amended by adding a new subsection (i) which establishes a "Drug Pollution Fund." Congress authorizes appropriations of moneys in the amount equal to that collected as fines for violations of Subsection (6) of Section 401(b) of the Controlled Substances Act (see previous paragraph). These funds may be used by agencies to clean up pollution resulting from drug related offenses.

For additional information

CONTACT: CECIL WILSON FTS 235-8484

LAST CHANCE FOR 2,4,5-T

Although all 2,4,5-T and Silvex should have been disposed of by July 7, 1987, there may have been recent discoveries of material that now require disposal. EPA is providing one last chance for disposal. If you have eligible products

CONTACT: ANGELA COYLE OR SCOTT SCHWENK (EPA) (703) 557-0465

ANNOSUS ROOT DISEASE MEETING

A symposium on research and management of Annosus root disease (Heterobasidion annosum) in Western North America will be held April 18-21, 1989 at the Asilomar Conference Center, Pacific Grove, CA.

The symposium will address basic biology, ecology, genetics, and host-pathogen relationships of annosus root rot; diagnosis, survey, damage, and impact on timber and recreational areas; forest management as affected by annosus root rot and current strategies for control; and future directions in disease management employing new research information.

If interested in this event

Contact: William J. Otrosina (415) 486-3158

EPA ACTS TO BAN CARBOFURAN

The U.S. Environmental Protection Agency (EPA) is proposing to ban a pesticide they say kills more than 2 million birds every year.

According to the EPA, granular carbofuran--widely used for 20 years mainly on corn and sorghum--has "unreasonable adverse effects" on birds.

The proposal was made 18 months after the EPA's staff recommended the ban. More than three years ago the agency began investigating the insecticide when large numbers of small birds were found poisoned in fields treated by the granules. The U.S. Fish and Wildlife Service has urged geographic restrictions on the chemical.

FMC Corp., manufacturer of the insecticide, issued a statement saying it is disappointed but confident of proving that the granules do not pose an unreasonable risk to birds during the 60-day comment period before a decision on the ban is made. At least 6 million pounds of granular carbofuran are used annually to treat 10 major crops. Carbofuran is used minimally on National Forest Service Lands to control insects in seed orchards and nurseries.

Department of Agriculture personnel are evaluating EPA's proposal and forestry concerns will be provided.

For additional information

CONTACT: JAY ELLENBERGER (EPA)	(703) 557-7400
JOHN TAYLOR (R-8)	(404) 347-2718
ZDENKA HORAKOVA (WO)	(703) 235-8209

CALL FOR AVIATION SYMPOSIUM PAPERS

Papers are invited for presentation at a Science Session of an Agriculture and Forestry Aviation Symposium to be held at Winnipeg Canada, 2-6 October, 1989. The emphasis of this meeting will be on the practical application of new developments in the field. Speakers at this session are requested to concentrate on:

- * describing technology to an audience of prospective users;
- * predicting future ideas, innovations and applications; and
- * explaining for the benefit of the user/operator the principals of operation of current new technology.

The objective of the Science Session is to maximize the interaction between the user/operator and the developers of new technology and science. It provides an opportunity to promote technology. This is not intended to be a session of scientific papers; however papers will be published in the Symposium proceedings. Presentations, 20 minutes including discussion, will be selected on the basis of abstracts submitted. Authors will be notified of acceptance by 31 May, 1989.

Submit abstracts of 500 words, before 31 March, 1989 to

Dr. G.F. Marsters, Director
National Aeronautical Establishment,
National Research Council Canada,
Building M-13A, Montreal Road,
Ottawa, Ontario, K1A 0R6

or, for further information

CONTACT: JACK BARRY

(916) 758-4600

FSCBG AERIAL SPRAY WORKSHOP

Several positions are still available for the one-week workshop entitled "Simulated Aerial Application of Pesticides Using the FSCBG Computer Model." The workshop will be held February 6-10 at Oregon State University. The objective of the workshop is to train those personnel that have responsibilities for planning or supervising aerial applications of pesticides in the use of FSCBG--a model designed to analyze spray programs and predict pesticide deposition and drift.

For enrollment information

CONTACT: BRIAN CLEARY (OSU)

(503) 754-2004

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